

# SKIN DIVER

MAGAZINE

35c

March

1961

Acme

VISIT THE  
"SEA HUNT"  
SHOOTING SET

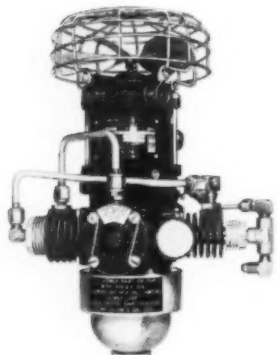
NAVY FROGMEN & DISPOSABLES

MASSACHUSETTS YANKEE  
IN KING NEPTUNE'S COURT

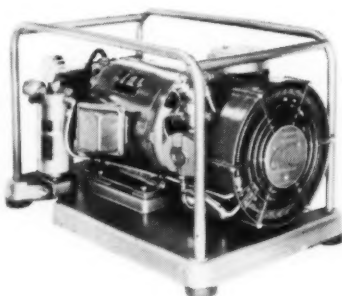
MAYAN UNDERWATER ARCHAEOLOGY



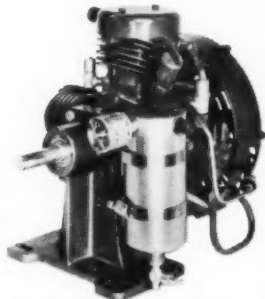
# Why you can't buy a "SURPLUS" Compressor from Cornelius



This Cornelius Compressor was originally designed to provide high pressure air for aircraft pneumatic systems. It is commonly called a "surplus" compressor. It is NOT designed to compress air of breathing quality.



Cornelius compressors designed for use by skin divers. There are no safer, more satisfactory compressors made for filling air breathing tanks with pure, clean, fresh air. This equipment is the most popular available today. It is fully guaranteed.



Obviously, The Cornelius Company is in a better position than any other firm to sell you modified Cornelius equipment. We do not do so because we value your safety and good health above any sales we might achieve by supplying "surplus" equipment that is PARTIALLY MODIFIED and that does not incorporate all the internal changes necessary to rebuild these units to provide safe, pure air.

When these "surplus" compressors first became available, The Cornelius Company investigated thoroughly in their research laboratory and engineering departments whether or not these units could be reworked as required to provide air of breathing quality. Even on a full production line basis, the cost of the complete modification to the compressor to meet the demands for consistently pure, clean, fresh air was found to be more than the cost of manufacturing new units of like capacity for skin divers.

We believe there are three good reasons why "surplus" compressors should not be used by skin divers.

- (1) "Surplus" equipment was originally designed for use on aircraft. Aircraft system requirements do not include any qualifications as to providing air of breathing quality. Since these units are "surplus" there is a good chance they may be worn and as a result there is always a danger they will produce compressed air which may be highly toxic and injurious.
- (2) These "surplus" compressors are designed for 1500 psi operation. To properly fill cylinders for skin

diving, higher pressures are needed. Operating "surplus" compressors in excess of rated pressure may result in higher internal temperatures in the compressor. This could cause the formation of deadly carbon monoxide. Another risk in running these units at above original pressure specifications is the possibility of structural failure which would make the unit inoperable. Or, a resulting rupture could cause a severe injury to anyone near the equipment.

- (3) Replacement parts for "surplus" compressors are not available. If "surplus" equipment should need repair you may forfeit your entire investment because of this fact.

**Cornelius does make a complete line of compressors that are specifically designed for skin divers.** These units are recognized throughout the world as the most efficient, dependable compressors made. Proof of their superiority is the fact that they are the most widely used compressors in use today. Cornelius compressors for skin divers are sold with an unconditional one-year guarantee against defects in materials or workmanship. Given normal, reasonable care, your Cornelius compressor should provide you with long, carefree service.

Find out how you can own the most convenient, smallest, lightest, most efficient compressor made—Cornelius. Compare what Cornelius offers, feature for feature and dollar for dollar. When you do you'll see why you can't buy a better compressor anywhere in the world today. *Write for free literature.*



THE *Cornelius* COMPANY / AERO DIVISION

560 39th Avenue N.E., Minneapolis 21, Minn.



**new  
warmth,  
new  
comfort  
for  
divers**



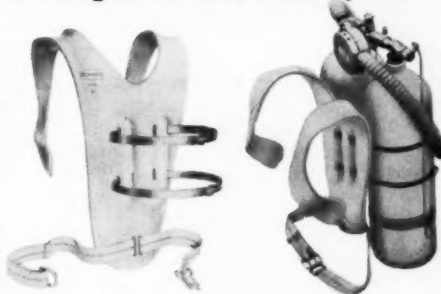
**with B.F. Goodrich Koroseal 5-finger gloves and QUIKPAK® back pack**

Now you can have warm hands without the nuisance of cumbersome mittens. New BFG 5-finger gloves are molded of Koroseal sponge that insulates the entire hand by the same principle used in "wet" type diving suits. Light, flexible, contoured to fit, BFG Koroseal gloves have a tough, smooth skin to withstand the most rugged use. Available at a suggested retail price of only \$4.95 in four sizes. Choice of black or safety yellow.

For SCUBA comfort nothing equals the BFG Koroseal QUIKPAK back pack. Designed to fit body contours, this new tank carrier slips on in only 5 seconds. The carrier hugs your body, prevents tank from rolling or riding up. Single nylon waistband features quick-release safety buckle. QUIKPAK does away forever with shoulder and crotch straps that bind, cut, and chafe. Available in medium and large, designed for use with single, double or triple tanks. Choice of yellow or deep sea blue.

Koroseal—T. M. Reg. U. S. Pat. Off.

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by... **ULMAC**

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# MERCURY

The most powerful name in outboards

***grows stronger  
every year!***

***Slamming over a submerged log at full throttle*** is a brutal test of outboard strength and stamina. Time after time, standard production 45 hp Mercurys and other brands of outboards were subjected to this "destruction test". Most competitive engines failed early — but Mercury outboards were going strong after dozens of these brutal jolts!

Mercury doesn't recommend this kind of "flying" for family outboarding pleasure — but even the weekend outboarder should be happy to know that Mercury motors will thrive under treatment far rougher than they will meet in normal boating use. The wide extra margin of durability built into Mercs demonstrates the advanced engineering concepts, the careful attention to details of design and construction that put Mercury years ahead of other brands.

You get more choice, more engine when you go Mercury! Only Mercury offers patented Glide-Angle Design twins — plus a choice of three 4-cylinder engines in

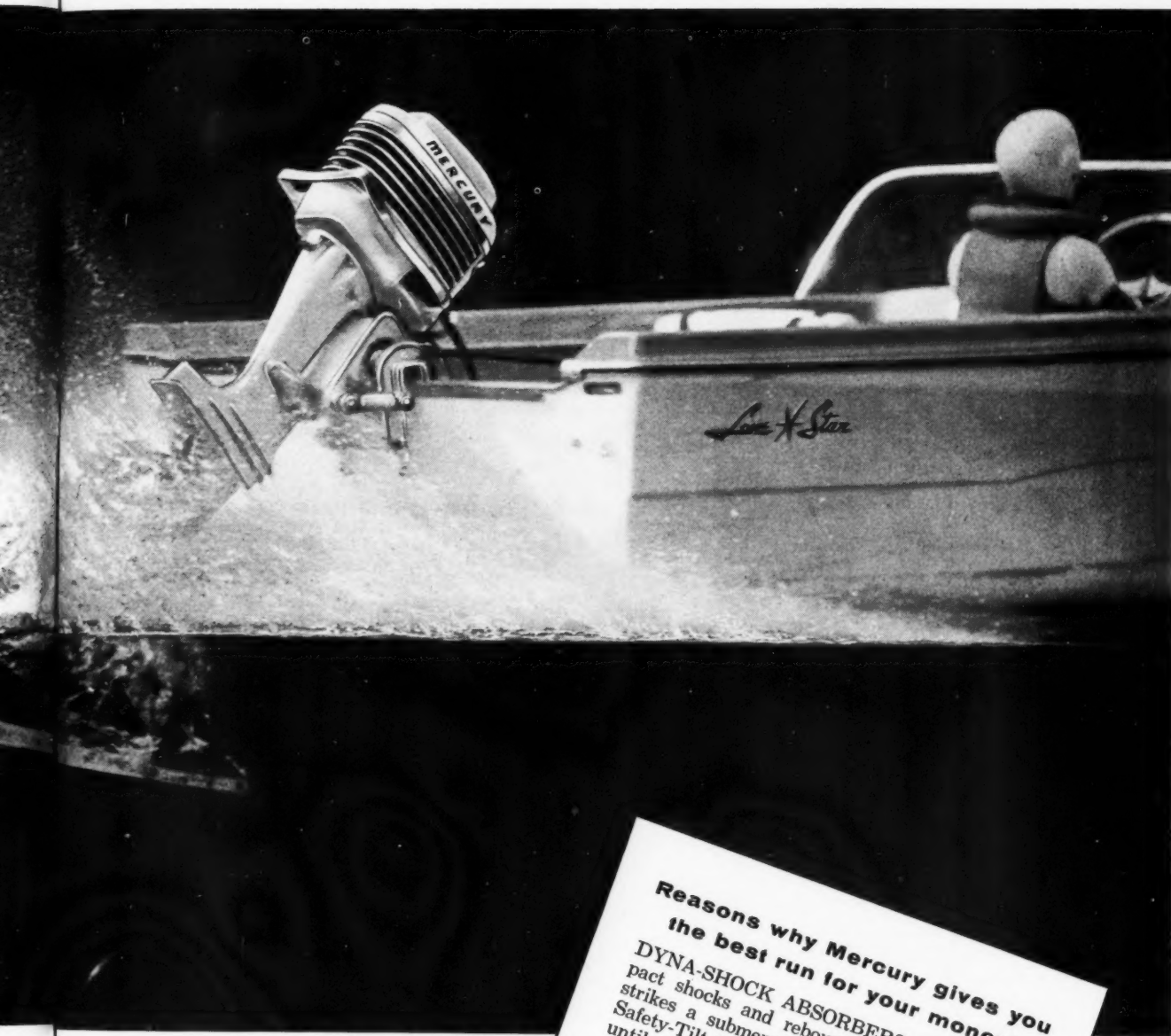
horsepower classes where others still offer only 2-cylinder motors. And *only* Mercury makes 6-cylinder family outboards! See them all at your Mercury dealer's now... check his liberal trades, easy terms!

*Tommy Bartlett says: "In my Tommy Bartlett Water Ski Shows, our famous jumping boats with 22 hp Merc 200's have thrilled audiences around the world with over 30,000 jumps in the past two years — with never a motor failure! That's real dependability!"*



**WORLD'S NO. 1 OUTBOARD — 11 GREAT MODELS FOR '61 — 6 TO 80 HP**





photographed at Florida's Silver Springs



50 hp Merc 500  
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in Mercury history.

**Where other outboards leave off...Mercury takes over!**

**SKIN DIVER—March 1961**

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**UNI-CAST LOWER UNIT** has one-piece housing that maintains precise alignment of gears, bearings and shafts; more leak proof; eliminates bolts, gaskets and screws on highly stressed members.

**STREAMLINED DESIGN** of lower unit is hydrodynamically correct for maximum efficiency. No protruding nose to hook weeds and underwater objects.



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Kiekhaefer Corporation  
Fond du Lac, Wisconsin



# SKIN DIVER MAGAZINE



LYNWOOD, CALIFORNIA, U.S.A.

Telephone NEvada 6-0581



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cover



Twenty-year-old Judy Rice, student at UCLA and model, poses at the Hawaiian Village Hotel beach just before a dip in the warm tropical waters of our fiftieth state. Behind the pretty drama major is famed Diamond Head, landmark of the islands. Photo by John Tichen.



DEVOTED TO THE UNDERWATER WORLD



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## Skin Diver Magazine

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# DIVERS' CALENDAR

- March 6-10**  
Midwest Region National Association of Underwater Instructors, Park College, Parkville, Mo.
- March 17**  
New Jersey Skin Diving Club annual dinner-dance, Friar Tuck Inn, Teterboro, N. J., 7:30 p.m.
- March 25**  
Deadline for Illinois Council of Skin and Scuba Divers Inc. photography contest.
- March 31-April 3**  
Second Pacific Coast Spearfishing Championships, Shoal Bay, NSW, Australia.
- April 8**  
Illinois Council of Skin and Scuba Divers, dinner-dance, Palmer House, Chicago.
- April 9**  
Longview Scuba Club spearfishing contest, Possum Kingdom Lake, Texas, 8 a.m.-1 p.m.
- April 9**  
Third Annual Northwest Divers Treasure Hunt, Tacoma Scuba-neers, Point Defiance Beach, Wash., 10:30 a.m.-2 p.m.
- April 14-16**  
Middle Atlantic Underwater Council's Second Annual Convention, Adelphia Hotel, Philadelphia, Penna.
- April 15-16**  
Midwest Diving Council Second Annual Convention.
- May 6-7**  
Kansas City Frogmen Club third annual spearfishing tournament.
- May 28**  
Second Annual Underwater Games, Mansfield Aqua Club, Hampton's Lakes, Mansfield, Ohio.
- June 3-4**  
Sixth Annual Fiesta of Five Flags Rodeo, Pensacola, Fla.
- June 3-4**  
Joplin Show-Me Divers first annual tournament, Pontiac, Mo.
- June 4-11**  
NAUI Washington State Council Instructor Training and Certification Course, Seattle, Wash.
- June 11**  
Inland Divers of Fort Worth annual spearfishing contest, Scuba Point, Possum Kingdom Lake, Texas.
- June 24-25**  
Seventh annual Blue Gill Derby, Lake Tenkiller, Okla.
- June 25**  
Greater Los Angeles Council of Divers Women's Championships, Divers Cove, Laguna Beach, Calif.
- June 30-July 2**  
NOGI Scuba Divers Tournament, Grand Isle, La.
- July 15**  
Northeast Council, two-day second class diver certification seminar, Christmas Island, Weirs Blvd., N.H.
- August 5-6**  
First annual Wichita Desert Divers tournament, Lake Tenkiller, Okla.
- August 20**  
1961 National Skin Diving Competitions, location to be announced.
- August 23-25**  
National Scuba Triathlon finals, New Orleans.
- August 25-27**  
Underwater Society of America convention, New Orleans.



## You'd have to be a fish to be more comfortable!

The NORMALAIR Underwater Breathing Set lets you do everything a fish can do—and talk as well. This set is really the most—most convenient, most complete, most safe—because it's designed and manufactured by one of the world's largest producers of breathing and air control equipment.

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### Other standard features include:

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WET SUIT KIT: No. 1 Grade 400% stretch skin 2 sides foam Neoprene is used in all of our wet suits. THE FINEST MONEY CAN BUY. Remember, only a FULL 1/4" wet suit gives the necessary warmth and protection under all diving conditions. When you buy, buy the most protection for your dollar. We install HEAVY DUTY anodized aluminum jacket zipper, quadruple welded and DOUBLE stitched with NYLON. We install reinforced NON-CORROSIVE snaps. High jacket collar keeps neck warm. Trousers have reinforced crotch and EXTRA HIGH waist for added warmth. Fantastic new NEO-WELD glue absolutely eliminates need for stripping. 1/4" WET SUIT KIT comes complete with hood, jacket with zipper and snaps installed, pants, boots, full 8 oz. NEO-WELD glue, and instructions. Send these measurements—Height, weight, chest, waist, hips, thigh (at crotch), wrist to armpit, ankle to crotch, neck, biceps, wrist, ankle, hat and shoe size. GUARANTEED to fit.

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RED, YELLOW or BLACK  
3/16 Skin 2 Sides  
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### 1/8" WET SUIT KIT

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Cut out ready to glue. Includes all items shown for 1/4" suit above. Same design. Send measurements.

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## OLNEY'S OVERSEAS OBSERVATIONS

Points of interest noted in foreign diving and fishing publications by Ross R. Olney, Associate Editor.

### What is a Skin Diver?

Between a boy's first water fight and a tottering old man we find a delightfully unpredictable creature called a Skin Diver. Skin Divers come in assorted sizes, but all of them have the same creed: To enjoy every second of every minute of every hour of very dive and to violently protest when the sun sinks beneath the horizon and it becomes too dark to dive. Skin Divers are found everywhere: on beaches, bragging in offices, swimming pools, rocky crevices, sporting goods stores, and club meetings. Mothers love them, young girls admire them, the boss envies them, wives hate them and heaven protects them.

A Skin Diver is truth with water in his ear, beauty with coral poison on its finger, wisdom with nature as its God and hope of the future with goodwill toward all fish.

When you are busy, a Skin Diver is thinking of air embolism, bends and air compressors. When you want him to make a good impression on new friends, he may only talk of the diving trip he made to the bay, the way he speared the 336 pound cod, the clear water at last month's competition, or the prospects of his newest underwater camera.

A Skin Diver is a composite . . . he is content with cheese, sardines and soggy sandwiches in a boat for his lunch, but his ulcer has to be pampered with a special diet when he's home. He will drink from any old tap without question. He has the energy of a hurricane when he starts swimming, although in the office it tires him to walk to the pay window. He has the lungs of a dictator when he yells "Jewie!!" but his wife complains he whispers all the time. He has the imagination of Commander Byrd as he scans the ocean bottom for sunken treasures. He shows the audacity of a steel trap as he swims in mid-winter, oblivious of the cold chills down his back bone. He likes old diving clothes, outboard motors, short wet suits, long dry weekends, clear water, a trip to the islands and questionable companions who are also Skin Divers and, most of all, unshaven faces. He is not much for parties when there is nothing to drink, sea urchins, educational books, barbers and people who don't dive. Without thought to race, color or creed, he likes people who dive all year. Nobody else is so early to rise or so late to dinner in good diving weather. Nobody else gets so much fun out of chasing sharks, exploring lobster nests and getting water up his nose, nobody else can cram into one pocket a rusty knife, extra spear heads, two packs of cigarettes, three packs of film, an apple, change for lunch, some sea sick pills and last year's shark tooth.

A Skin Diver is a magical creature. You might get sore at his constant chatter about diving but you can't lock him out of your heart. You can assign him schedules in the morning but you know where he'll be at quitting time. His sales chart will be as good as the next, but he'll get it there in his own sweet time.

You might as well give up. Skin Diver is a child of nature with a hopeless one track mind. He'll do his work with the best of them, but when vacation time rolls around he's out on the water, an old veteran on the prowl for whatever may come. And though you get angry with him, you know you'll always like him.

For there's something about him that rings true . . . he's almost too honest maybe. He's a simple, kindly man who asks no more of life than to have a lung on his back, mask on his face, flippers on his feet and water to dive in. (Down Under. Written by Ricou Browning from Alan Beck's "What is a Boy?")

What J. Y. Costeau saw in it . . . "From birth, Man carries the weight of gravity on his shoulders. He is bolted to earth. But Man has only to sink beneath the surface and he is free. Buoyed by the water, he can fly in any direction . . . up, down, sideways . . . by merely flipping his hand. Underwater, Man becomes an Archangel." (Australian Skin Diving Digest)

SKIN DIVER—March 1961





## THE VISIBILITY'S GREAT !

Things always seem just a little clearer when you have the kind of confidence that comes from wearing a Nemrod mask "by Seamless." The lens in all Nemrod masks is made of laminated double-plate safety glass for outstanding dependability — an exclusive Nemrod feature. ■ There is a Nemrod mask exactly right for you. The Barcelona incorporates the most effective of all purging features, may even be fitted with your own prescription eyeglasses. The Bermuda is designed with tilted lens for maximum field of vision. The Madrid is perfect for snorkel enthusiasts, while the Capri is specially proportioned for women and children. All Nemrod masks provide maximum comfort and "soft" fit. Pick the model that suits you best. Priced from \$2.95.

*Nemrod* masks by **SEAMLESS**

ATHLETIC DIVISION • UNDERWATER EQUIPMENT • THE SEAMLESS RUBBER COMPANY, NEW HAVEN 3 CONNECTICUT



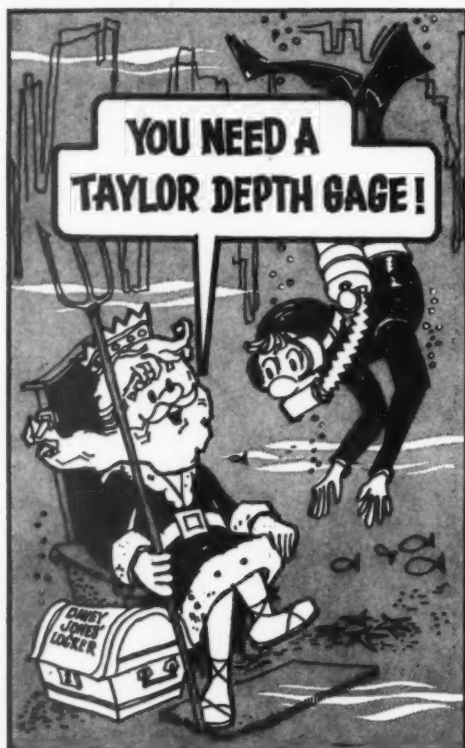
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The better you get at skin diving, the more you'll rely on these dependable Taylor Instruments. They'll always keep you from being "at sea" about depth, direction and water temperature. Taylor Instrument Companies, Rochester, N. Y.; Toronto, Ont.

**Depth Gage** has luminous figures, graduations and pointer. Gives readings in 5-ft. graduations to 140 ft. Accurate to within 2.8 ft. A universal favorite.  
#2059, \$10.95 retail.

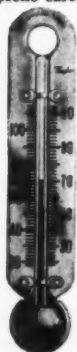


**Compass** has big black arrow and luminous dial to help you find your way while below. Liquid-filled dome with leveling bubble. Sturdy neoprene case.  
#2959, \$6.95 retail.



**Under-Water Thermometer** fits on wrist or belt. Easily visible Permacolor® fluid tells the temperature at a glance. Stainless steel scale, 5' long.  
#5282, \$2.50 retail.

\*Reg. U.S. Pat. Off.



**Taylor Instruments** MEAN ACCURACY FIRST

## Reader's Ripples



... I have taken up skin diving only six months ago and purchased a second hand cylinder of 72 cubic inch. Around the neck of the cylinder were markings which I would like to be cleared up on. Made by Healthways of Los Angeles, the tank was marked ICC3AA50, HI2286, PST, 7-56.

Marcel Fournier  
252 4th Street  
Quebec 3 P.Q.  
Canada

ICC3AA means the tank complies with ICC code number 3AA in size (2250 pounds per square inch) and material. 50 is the date of manufacture. HI is the inspector's mark and 2286 is the manufacturer's serial number. PST means it was pressure tested as prescribed by law and 7-56 is the date of this test. These tanks should be re-tested every five years and re-marked.

... In your last issue in the article "The Sea and the Future" by Ross R. Olney, you mentioned the book "The Challenge of the Sea" by A. C. Clarke was available through you. Could you please inform me as to the price?

Nick Icorn  
4424 Levelside Ave.  
Lakewood, California

The price is \$3.95 and the book can be ordered from SDM or the publishers, Holt, Rinehart and Winston, New York, N.Y.

... As Vice President of the Brant Skin Divers which is our local club, and as Vice President Elect of the Ontario Underwater Council I have been asked by a few of our local members to see if I could obtain information as to the exact location of the Andrea Doria.

I was wondering if you might be able to supply us with a chart, or put us in touch with the person or persons who might be able to assist us in planning a dive on this wreck.

Ross Shrum  
104 River Rd.  
Brantford, Ont., Canada

According to a radio message from the Stockholm the night of the sinking of the Andrea Doria the position was: latitude 40°34' N, longitude 69°45' W.

This position is 45 miles south of Nantucket Island, Mass., and about 200 miles NE of New York City.

... I am working on an exhibit on marine biology which will be entered in the Mobile Science Fair. I would be very grateful for any help I might be able to obtain through your magazine. Any literature, plant or animal life, or water samples, would be greatly appreciated. Would be very grateful if you could publish this in your next issue and I would be very glad to help anyone as much as I can on information or specimens from the Gulf Coast area.

John Anderson  
Rt. 1, Box 553  
Saraland, Alabama

(Continued on Page 12)

SKIN DIVER—March 1961



## "aqua-master" regulator

There is one basic change for 1961 on the already superb "Aqua-Master" Regulator... a re-designed hose and mouthpiece assembly. The black neoprene hose, in its relaxed state, is shorter than the former hose, but there are more convolutions per inch, which provides much greater stretchability. This enables the diver to turn his head from side to side with complete freedom and with no pull on the mouthpiece.

The new streamlined mouthpiece is contoured to the natural curve of the face and of the hoses and fits snugly to the mouth. The mouthpiece is smaller and more comfortable, yet provides the normal flow of air to the diver without additional resistance.

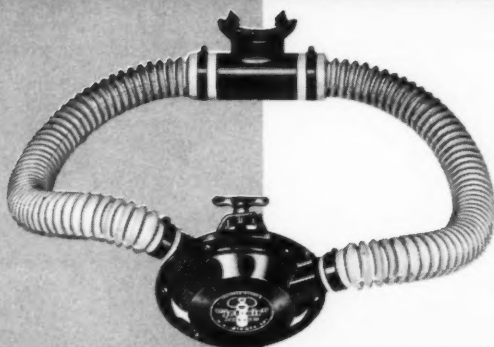
1010 "AQUA-MASTER" REGULATOR.....90.00



## "jet-air" regulator

Incorporates all the famous "Aqua-Lung" safety features. Housing of high-impact black cyclac, a very strong, tough plastic, impervious to salt water, sun and chemicals. A single stage, two hose regulator with the same working parts as the "Mistral." Yellow hoses and black mouthpiece.

1020 "JET-AIR" REGULATOR.....50.00

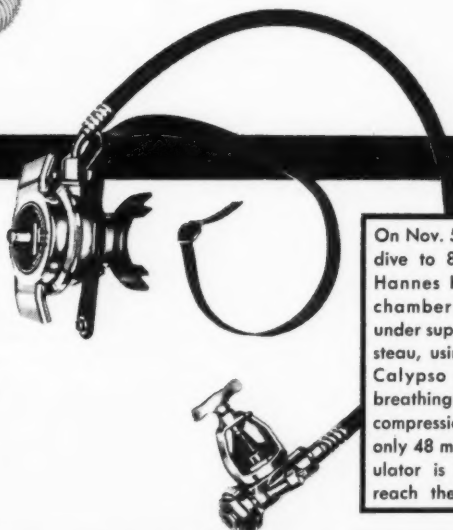


## "calypso" regulator

Exclusive "Calypso" performance characteristics are:

- 1) Balanced type first stage... provides even and constant pressure to second stage regardless of tank pressure, allowing diver to use full air supply. Air flow characteristics designed for deep diving requirements. Equipped with pressure indicator for easy checking of tank pressure.
- 2) Second stage incorporates a safety feature that releases any excess pressure through the exhaust valve while still supplying normal breathing requirements.
- 3) "Calypso" is equipped with clearing button, hose swivel attachment and neck strap.

1030 "CALYPSO" REGULATOR.....70.00



On Nov. 5, 1960, a successful test dive to 830 feet was made by Hannes Keller in a water test chamber of the French Navy, under supervision of Capt. J. Cousteau, using the new U.S. Divers Calypso regulator. A special breathing gas was used and decompression time required was only 48 minutes. The Calypso regulator is the only unit to ever reach these depths successfully.

## "aqua-div" regulator

The "Aqua-Div" Regulator is a simple and efficient one-hose unit for sport diving. The FIRST STAGE is designed on the same principles as the first stage of the famous "Aqua-Master." Equipped with fitting for pressure gauge.

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## SDM OPINION...

**S**KIN DIVER MAGAZINE'S Diving News is evidently a success . . . if the first opinions and expressions from divers measure the thoughts of all subscribers. While in attendance at the N.S.G.A. Convention in Chicago we purposely inquired about the newspaper and were indeed gratified at the answers from the diving dealers, most of whom were active divers and club members. There is a definite purpose for this new medium . . . we hope that our presentation fills the bill.

The material for Diving News will come from the divers, as it does for the magazine, and we depend on club, council and Society reporters to keep the news of their activities coming for the publication. Also we are depending, on a large scale, on the divers to encourage their local diving equipment dealers to advertise in the Diving News. The ads will appear in conjunction with the news and activities of that particular state or region. This formula rings success. Success for the dealer and the newspaper. We know that it will take a little time for the new publication to "catch on" and to be accepted for what it is, however we can't publish for any great length of time "in the red" on the newspaper. Diving dealers will now see the importance of advertising, and at the ultra reasonable rate of \$5.85 per column inch, if they know that the local divers are reading their notices and ads. Talk it over with your dealer, show him the paper and inform him of how many divers right around his store are receiving Diving News. Here is your chance to insure the success of the newspaper and further the reliability of your dealer. The more success he has means a better shop for you . . . more lines of equipment . . . better instruction for neophytes, plus a myriad of things that goes with a happy, successful diving dealer. Our opinion is of course that all shops selling underwater equipment should support their local divers through some advertisement in Diving News. The newspaper will certainly further diving as "Skin Diver Magazine" has done.

Questions: Many rumors are bouncing around implying that there will soon be a chain of dive shops around the country. Have you heard this? What do you think? Could a company with enough capital operate a chain of dive shops? From one headquarters? On a franchise basis? Would this help diving? Would this help standardize instruction?

Will discount houses get into the swim—skin diving that is? If so, who will give instruction, repair equipment, refill air cylinders and give friendly professional advice, plan diving excursions, build up the sport on lecturing to service clubs and other outside groups? Doesn't skin diving deserve the personal touch? After all, we aren't in the class of selling nails, paint, furniture and drapes. Diving is a complicated, but enjoyable pastime which requires a fair amount of knowledge in order to enjoy it to the fullest. Individual dive shops and sporting goods stores have been the answer in the past.

Does the average dive shop and manufacturer of diving equipment carry adequate insurance to cover equipment and instruction classes?

No opinion on this right now from us . . . just questions.



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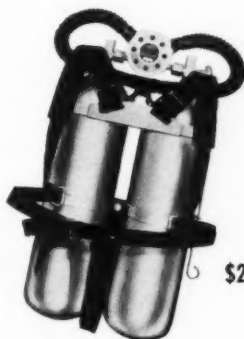
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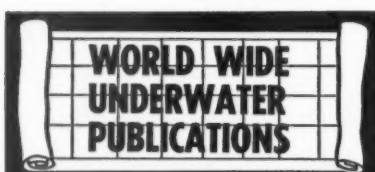
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## Reader's Ripples



(Continued from Page 8)

... As both a scuba diver and a Chicago Park District Lifeguard I know both sides of the Chicago Lakefront diving controversy. Last summer on my day off I went down to the lake with my mask and fins to dive in an unpatrolled stretch of shore. When I was there for about one half hour I heard a man screaming for a lifeguard. I ran over and he told me that his buddy had gotten a cramp and went down in about 30 feet of water (visibility 2-3 feet). We knew the approximate location where he went down but I had been diving and swimming before and I was having a difficult time staying down.

When the scuba divers arrived from the beach they found the body in five minutes. But it took them ten minutes to get there. Secondly, the CPD officials who said lifeguards are trained for diving to their standards is either misinformed or a liar.

Many lifeguards go diving but nobody asks them if they know how, and some of them don't.

(For obvious reasons the name of the writer is withheld.)

... I think one of your contributors has hit upon the solution to one of our company's most pressing problems... ie, the transfer of our D-6 Caterpillar Bulldozer from one job to another. Perhaps you could persuade Mr. Richard H. Rice (Operation Bulldozer, January, 1961 SDM) to furnish us with the name of the dealer for those new 4,450 pound D-6 cats. We could then replace our old D-6, many times heavier, with the newer lighter model thus enabling us to transport it on our two ton winch truck.

Leon W. Kierbow  
Cotton Valley, Louisiana

*It seems the Cat in question weighs 24,450 pounds. Sorry.*

... I would like to know how true the following information is. This information was taken from the Jack Parr show. A Dr. Keller who is a Swiss doctor said he has descended to 500 ft. or more using mixed gases, what sort of mixed gases was not mentioned on the show. This he said would do away with Nitrogen Narcosis (Rapture of the Deep) which you would get from compressed air. Dr. Keller said he also intends to go down to 1,004 ft. I would like more information on this if possible.

This information would greatly be appreciated. This would truly be a remarkable advancement in diving.

Mr. Leonardo Tarantino  
16 Sixth Avenue  
Newark 4, New Jersey

*See February SDM, page 22.*

... Do you know of any places on the California coast where commercial abalone diving is done?

R. D. Brice  
R. 1, Box 46A  
Globe, Arizona

*Abalone are taken commercially from all the channel islands and along the coast from Malibu north and from Newport Beach south.*

... Read the January issue of SDM with some delight and some disgust. Lest Mr. Dick Anderson forget, his Buffoonus-Aquarius is also his meal ticket. Actually to use the term Buffoonus-aquarius (correct biological form) is a misnomer. We call them "dips" to signify rank amateur. The beginner or novice is what Mr. Anderson and all the others who deal in diving equipment manufacture and sales depend upon for continuing existence.

The "old pro" divers who call the novices dips do so in jesting fun. These old pros remember their own dip days and usually will offer advice to better diving. I see no advice in Mr. Anderson's emotionally disturbed diatribe... indeed, just insults. Perhaps Mr. Anderson would do better to write some educational material to enlighten his Buffoonus-Aquarius. He could also be original in his underwater photographic ideas, as Cousteau photographed a diver in a submerged bathtub years ago.

Don Morrison  
4927 Narrot Street  
Torrance, California

... Read "Buffoonus-Aquarius" in the January issue and here's my vote for more humor in SDM. The serious, factual, scientific material is fine and should definitely be continued but an occasional, hilarious piece like Mr. Anderson's is most welcome.

Paul Bryant  
Los Angeles, California

... First off you must buy a Rollie camera and a sixteen foot open dingy (that you will call a cruiser). Now this automatically makes you an expert on underwater photography and you are, of course, in a position to pass judgement on all other divers around you. Naturally when you are in the water there shouldn't be anybody else around for at least two or three miles, much less on the same wreck, except your buddy diver who, out of the goodness of your heart, you let dive with you. Of course when your buddy goes in the water he must do so with much care so that he does not stir up the water. When you purchased the camera you also became an expert on thought transference so that hand signals are not needed. See what money will do, even in diving?

Now what you do when you get a boat load of divers in the area is to put your well-built wife out on deck for about half an hour in a two piece bathing suit. This will naturally get rid of them. Or better yet, take her down to the wreck and let her pose for pictures. This will get them out. (Out of the boat and into the water) At this point you will become a real power house, able to lift a 250 pound mooring block which normally takes two or three divers to do. You have to watch out all the time... these Buffoons will grab an anchor laying right there with your anchor (50 or 60 yards away where it was dropped) just as if it belonged to them. And as for lifting that mooring block with an eighth inch cord, its out of the question. Especially if you have a hard time holding up your pants with a half inch rope.

Buffoonus Aquarius

... Speaking strictly as a novice (B-A I guess) I've seen so-called experts do everything from diving alone to dropping weights down inside their wet suits. Nevertheless, Mr. Anderson's article was a welcome change and perhaps more accurate than many divers care to admit.

Olen Roberts  
3530 S. Dixie  
Lima, Ohio

*What can we say?? More humor or not?  
(Continued on Next Page)*

SKIN DIVER—March 1961



## Reader's Ripples



(Continued from Last Page)

... I'm planning on making an underwater camera housing out of plexiglass using a Bell-Howell camera, electric eye. I'm in doubt as to what to use for a flash and power supply. All my experiments with flash in salt water have so far left much to be desired. I'm hoping a reader may have made a home made outfit that has proved satisfactory and would kindly send the information along to me. I'll appreciate any help.

Vaughn Nickerson  
615 West 8th Street  
Chester, Pennsylvania

... In the December issue of SDM you give a gift to all the readers of the world, a treasure map. I will not question the thought behind the gift but I do question its accuracy.

There are I am sure many wrecks which divers would be most happy just to see and be able to look over. They would not have a great treasure on board, just be a ship, and the average diver would be content.

If you really want to give a Christmas present for next year give a listing of known wrecks that can be reached by the average guy or gal, these lists can be compiled from navigation maps now in use, with a little explanation and simple directions to guide the stranger to the area. This we could really use. But please no more treasure.

Joe Fabian  
519 S. Main  
Naperville, Ill.

*Every treasure map maker has his own opinion, based on his own research. After all, if an exact, positive location could be given without a shadow of a doubt how long would the treasure last? That's why such a large portion of the world's wealth is at the bottom of the sea. However, we do plan to run another map in the near future, this one by the well-known John S. Potter, Jr., treasure expert and author of the popular "Treasure Diver's Guide."*

... I am a member of a Belgian diving team who recently made one of the largest discoveries in underwater speleology after crossing numerous water-traps. We also discovered an important underwater archaeological field, in Belgium's largest cave, and we have succeeded in the rescue of a young spelunker girl caught behind a water-trap.

I would appreciate exchanging information about other discoveries in the field and about new techniques. If possible this matter will be used in a book that I am preparing about cave diving. I hope to be able to make this survey as complete and up to date as possible?

Marc Jasinski  
256 Dieweg, Brussels 18  
Belgium

... I would like to obtain information on the locations of diving academies in the United States.

Reynold M. Jones  
121-15 180th Street  
St. Albans, L.I., New York

You might try Commercial School of Deep Sea Diving, 2301 E. Anaheim, Wilmington, California; Divers Training Academy, 9302 South Dixie Highway, Miami, Florida; or Coastal School of Diving, 320 Broadway, Oakland, California.

(Continued on Next Page)

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## Reader's Ripples



(Continued from Last Page)

. . . I've just finished reading "Mask and Flippers," the story of skin diving by Lloyd Bridges and recommend it to all divers. Lloyd Bridges did a wonderful job on the book. It has everything a book on skin diving should have and much more.

Your magazine also does a wonderful job all the time. It keeps divers informed on our water world. Keep up the good work.

Claude L. Bernhard  
3540 N. Wilton Ave.  
Chicago 13, Illinois

We agree with you on Mr. Bridges book. See the book review in this issue for an idea of what "Mask and Flippers" covers.

. . . I would like to ask you if you can do something for skin divers. We all know about the Divers Flag but what about the boatmen? I'll bet that 99% of the boatmen know nothing of the meaning of it so I'd like someone to try to inform people. I'm sure going to do my share and I hope other divers will too.

Terry Cobb  
2026 N. Bissell  
Chicago 14, Illinois

Announcements concerning the Divers Flag have appeared in the majority of the national boating magazines and bulletins and have been posted in yacht harbors and marinas by local clubs by the hundreds. Perhaps some boatmen are still unaware of its meaning but education is a continuing thing and such announcements and posters should be renewed yearly.

. . . I am interested in underwater photography and would like to know if anyone has successfully taken underwater pictures with a 35 mm camera using a telephoto lens and an 8mm motion picture camera using "zoom" lens. Perhaps your readers could explain the drawbacks as I understand a wide angle lens is most commonly used.

Robert Sanders  
RD No. 1, 188 E. Maine Rd.  
Johnson City, New York

. . . Just thought I would add a comment or two about Dr. Kirker's article in the January issue. I agree with him on the merits of diving with a life jacket but only in open sea water. Their advantages are quite obvious when diving in the ocean or in lakes, however, they have very limited use in cave diving.

Bob Tucker and I recently explored a cave which ran horizontal for 900 feet where we turned back. The depth never exceeded 25 feet. Had we been wearing life jackets or comparable flotation devices they could have accidentally fired on the rough rocks in one of the tight squeezes along the way. The disastrous result is obvious. We see many divers going into caves with flotation gear, the use of which would only pin them helplessly to the roof of the cavern. I feel sure Dr. Kirker will agree on this.

Ronald G. Howard

Generally speaking, to all divers we still recommend you wear some type of flotation equipment. Specifically speaking to cave divers we suggest you cover or protect the triggering device of the flotation gear you use, thus preventing accidental inflation.

(Continued on Page 69)



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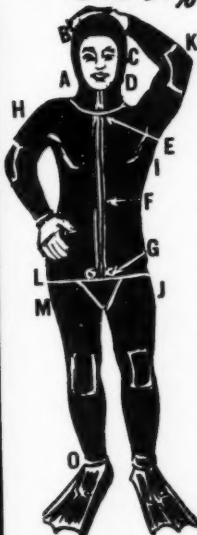
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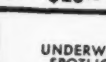
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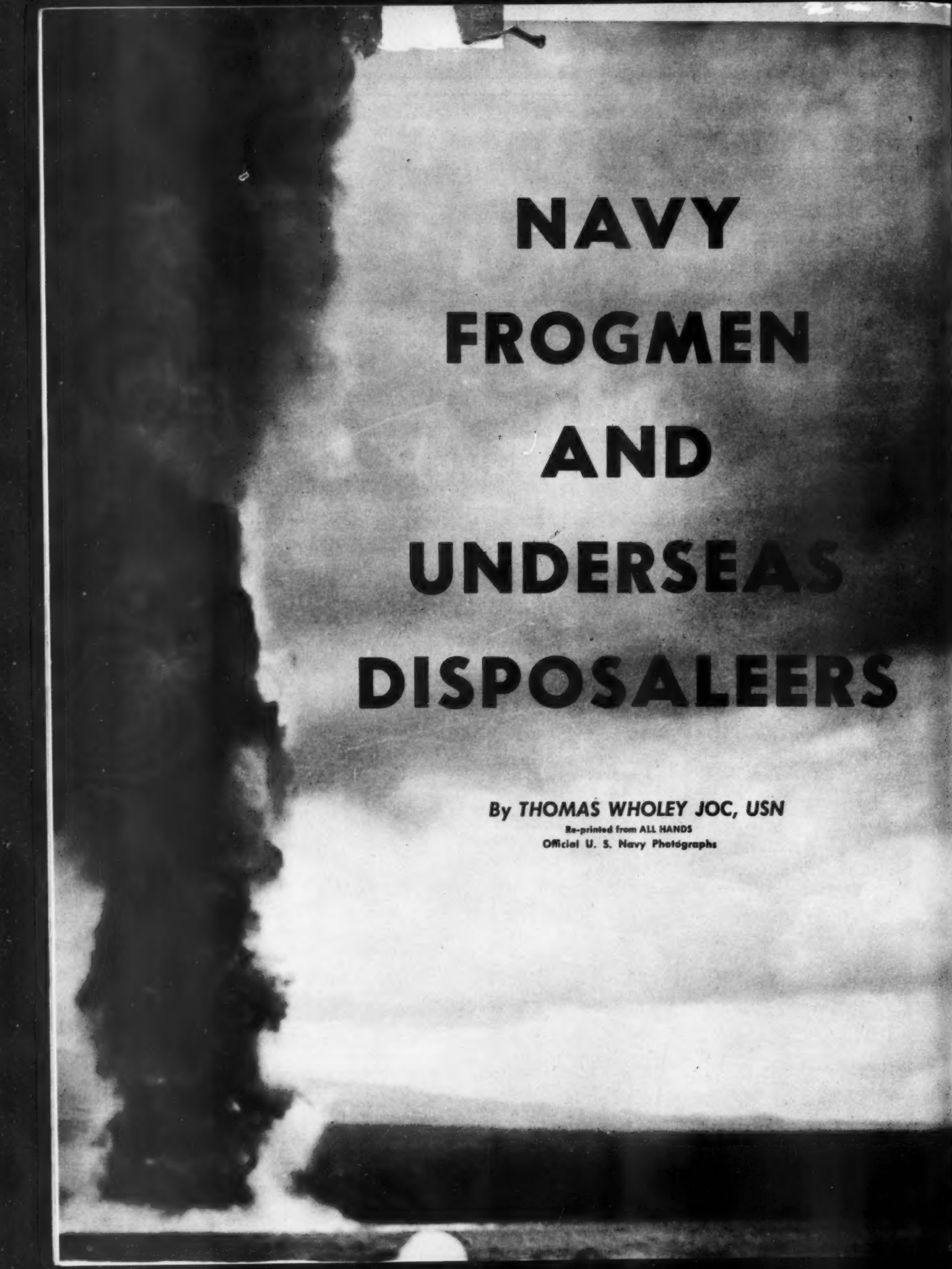
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# **NAVY FROGMEN AND UNDERSEAS DISPOSABLEERS**

**By THOMAS WHOLEY JOC, USN**

Re-printed from ALL HANDS  
Official U. S. Navy Photographs



WHEN A GUST OF WIND caught the aircraft carrier *USS Franklin D. Roosevelt* (CVA 42), it shoved her seaward from her dockside moorings. The gap that widened between the ship and the pier was just enough to dislodge the after brow and send it toppling into 55 feet of water.

Two men from *FDR*, Ensign Paul Powers and GM2 William Cavanaugh, quietly donned lungs and face masks and entered the water. Within 90 minutes the brow was located, lines were secured and cranes had hauled it to the surface. The locators of the elusive brow were scuba divers.

Scuba diving is the art of swimming underwater with the aid of a breathing device. According to under-sea explorers, this sport is the most.

The popularity of skin diving continues to grow in almost all parts of the United States and the world. Although many divers confine themselves to "snorkel diving" (without breathing apparatus), additional thousands have acquired self-contained gear and are able to make dives which only professional divers could even consider a few years ago. The Navy's interest is not concerned with the sporting aspect of scuba diving. It is interested in the mobility factor in that a man can get into this gear, inspect the bottom of a ship and be out of the water faster than a deep sea diver can get into his outfit to do the same job.

The navy teaches initial scuba diving at the Underwater Swimmers School in Key West, Fla. The course is five weeks long, based on a minimum of 30 instructional hours a week. The training includes diving physics, the primary and secondary effects of pressure on the body, accident prevention, safety precautions and first aid. Instruction is provided in the characteristics, maintenance and use

Frogman rolls into water from LCVP in demonstration of debarking technique.



of open-circuit, closed-circuit, and semi-closed circuit types of scuba. Sufficient scuba diving experience is provided to enable the student to perform safely underwater while going down to a depth of 100 feet or swimming underwater to distances of 1000 yards.

The five-week scuba diving course is open to officers and warrant officers who are under 40. The age limit for enlisted is 31 and they may be of any rating or pay grade, but should be ratings closely allied to EOD, UDT, or deep sea diving allowance structures. All must be male volunteers. They must meet the physical and psychological standards outlined in the *BuMed Manual*; must be at least second class swimmers.

The equipment used in the scuba training is the open-circuit air demand type. The Aqua-Lung, Scott

Hydro-Pak, and Northill Air Lung are used.

The term "self-contained" indicates that the diver carries his breathing medium with him in cylinders and needn't have the worries of becoming entangled with hose connections to the surface. The three types of self-contained apparatus listed above are in present use. Each type of scuba may include more than one make or model of unit, but the basic principles and characteristics are essentially the same for all units within the type.

Open-circuit scuba is the simplest type and the one most frequently used. The diver has, strapped to his back, cylinders of medium weight which are normally charged with compressed air. A special type of regulator supplies air on demand when he inhales. No rebreathing takes place. The fact that air flows only in response to inhalation requirements helps conserve the supply. Depth limitations and air bottle capacities are the principal drawbacks of open-circuit gear.

Closed-circuit units employ pure



Frogmen ready to drop off into cold water to take soundings along evacuation route to Tachen Island.



Preparing to dive under the ice. Navy icebreaker U.S.S. Burton waits in background.



Frogmen in training blast away various landing hazards to practice technique later used in combat.



## FROGMEN

(Continued from Last Page)

oxygen as the breathing medium. The diver breathes this gas to and from a rebreathing bag through a canister which contains a carbon dioxide absorbent. No gas is normally exhausted to the surrounding water. Since the body consumes only a small amount of oxygen compared to the total volume of breathing, a relatively small gas supply suffices. Closed-circuit scuba also has the advantage of freedom from bubbles and noise, important in some tactical applications. The main drawback is the severe safety limitations imposed by the possibility of oxygen poisoning.

Semi-closed-circuit scuba was developed to permit conservation of gas by rebreathing without the necessity of using pure oxygen. The apparatus is along the same lines as closed-circuit scuba, but a continuous flow of a gas mixture is provided to assure that the oxygen level remains constant. The diver re-breathes the major portion of the gas, but a certain amount is continually exhausted from the system. Much greater durations can be achieved than with open-circuit scuba, without the danger of oxygen poisoning associated with closed-circuit scuba. Generally, mixtures of nitrogen and oxygen are used. This can sometimes provide an added advantage by shortening the decompression time required.

Activities other than the school in Florida have been authorized to conduct limited scuba training on a "not to interfere" basis. These include: Underwater Demolition Units One and Two, Explosive Ordnance Disposal Units One and Two, U. S. Navy Mine Defense Laboratory; U. S. Naval Submarine Base, New London, Conn.; U. S. Naval Submarine Base, Pearl Harbor; U. S. Naval School, Deep Sea Divers, Washington, D. C., and U. S. Naval School, Explosive Ordnance Disposal, Indian Head, Md.

Ships that have allowances for scuba and swim suits are AN, ARS, ARSD, ASR, AD, AS, AR, ARG, AV, AM, AMS, AVP, and all types of CVs.

Since the Underwater Swimmer School was commissioned in 1954 it has graduated 200 students a year in the art of scuba diving. Some end their schooling at this point and return to their ships or stations with increased skills. All are encouraged to enter training for Underwater Demolition Units (UDU) and become frogmen, or join Explosive Ordnance Disposal (EOD) units and become disposal technicians, or spe-

Buddy breathing is practiced by a soldier and a sailor, both in training for underwater warfare.



cialize within the deep sea diving program.

### Explosive Ordnance Disposal

The navy Explosive Ordnance Disposal School at Indian Head, Md., is an outgrowth of the bitter experience of the British at the beginning of World War II, when the Germans, with their huge air power, began a demoralizing campaign against the British Isles. Many tons of complex mines and bombs were purposely fused to detonate from one to 80 hours after the drop. About five per cent of those not so fused, failed to explode. Faced with the urgent need to recover and dispose of these bombs and mines, the British hastily formed the first bomb and Mine Disposal Squads.

American naval officers, attaches in London during the blitz, recognized the pressing need for a similar program in this country. Upon their return they established the Mine Disposal School at the Naval Gun Factory in May of 1941. A Bomb Disposal School, established in December 1941, was next on the agenda. This was moved to the campus of American University in Washington, D. C., in the Fall of 1943. Graduates

of these schools ranged over most of the globe, providing detailed information on enemy ordnance and on clearing channels, harbors and captured air fields of mines, dud bombs, and booby traps. In November 1945, the two schools were combined and established at the U. S. Naval Powder Factory, Indian Head, Md.

In 1947, responsibility for EOD training for all services was given to the Navy, and officers and enlisted personnel of all services were added to the staff. Today the U. S. Naval School, Explosive Ordnance Disposal, is located on the grounds of the renamed Naval Propellant Plant at Indian Head, Md. Its new facilities, completed in July of 1958, are among the most modern.

In order to give some idea of the subjects covered by the School, let's trace a typical Navy section during its seven-and-a half month course. The courses taken by the other services are identical, except that the naval EOD trainees are required to study underwater ordnance and diving. As a prerequisite they must be graduates of scuba training at the Underwater Swimmers School, Key West, Fla.

The first phase of instruction is in

Frogman takes underwater photos of submarine for use on television series "Navy Log."





the use of conventional diving equipment. This leads to qualification of the trainee as a diver second class. Since the warm, crystal clear waters of Key West are a far cry from conditions which exist in most harbors, diving training is conducted in the muddy Potomac, where visibility is strongly similar to that found on the inside of a cow. Here the student is taught to work without seeing, by the sense of touch alone, while wearing clumsy three-fingered gloves.

After completion of six-week diving phase, there is instruction in certain "basics" which apply to ordnance. This covers the various principles that are used to arm and fire electrical, mechanical and chemical ordnance and many explosive fillers used by other countries. Information is picked up on chemical and bacteriological fillers and the best methods for rendering them harmless.

Next comes practical training at the demolition firing area of Stump Neck Annex, Naval Propellant Plant. Here the student is given a thorough course in demolition with special emphasis placed on safety precautions. This is followed by a course in EOD tools and methods. Then he goes to a study of the three categories of underwater ordnance: influence mines, contact mines, and torpedoes.

After this, he is required to prove his disposal ability on actual items of ordnance. If the problem is handled improperly, harmless but noisy charges are detonated at a safe distance from the student to let him know that something went wrong.

Upon successful completion of this phase, the trainee combines his diving and underwater ordnance skills and spends the next few days working on mines at the bottom of the Potomac, rendering them safe, floating them, bringing them ashore, and completely stripping them.

At this point, he has completed the strictly "Navy" portion of the course. But training doesn't stop. The remainder of the course is the same for all the other services.

His next step is a study of various-type ordnance which includes land mines and booby traps, projectiles of all sizes and shapes such as rockets, and grenades. The diversity and complexity is almost beyond belief. A single subject of the several taught under surface-type ordnance covers everything from Civil War cannonballs to the latest artillery projectile of all the services, in addition to all similar ordnance of foreign nations.

The EOD student next studies "dropped" munitions. Bomb and pyrotechnics of all types as well as their

fuzing are taught here. These include the familiar mechanical fuze, and fuzes that operate on almost every source of power than can be crammed into the small space available. Proximity fuzes are also taught. This course is again complemented by practical work at Stump Neck, followed by the study of guided missiles. All U. S. and many foreign missiles are taught together with their intricate fuzing, and their maze-like propulsion systems.

Then the trainee is introduced to a field which is not generally associated with ordnance. This has to do with explosive hazards found in aircraft, such as ejection seats and explosive bomb releases. To provide practical training in this subject, the school has acquired a complete jet fighter. Following the study of explosive hazards and safe methods comes the study of photography, and how to recover buried ordnance. This is officially designated "Access and Recovery" and nicknamed "Riggin' and Diggin'."

The next step requires actual surface EOD work, and the student is sent to Eglin AFB in Florida where he works on live ordnance under field conditions. The bombs are dropped specifically for the students by the Air Force. This is actual EOD work with standard ordnance performed under the close supervision of instructors TAD from the school, who are responsible for practical demolition training.

Upon return from his surface stint, the student goes to the Special Weapons building. Here he is given an intensive course in the intricate procedures for rendering dangerous nuclear weapons safe.

At the end of 31 weeks, the course is completed. The new EOD personnel are sent by their various services to field positions. Since frequent refresher courses are required, they will return, sooner or later, to the school for the latest EOD information available.

Students must all be volunteers, whatever their service. Standards are high. Trainees may be dropped for "inaptitude" for EOD work because of lack of mechanical ability or nervousness in handling explosives.

Here the most damning comment an instructor can make concerning a student's suitability for EOD work is, "I would not care to work with this man in the field."

Graduates of the EOD School are spread throughout the services. Naval personnel are sent to minesweepers, carriers, ammunition depots, harbor defense units, and to the two EOD units maintained by the Navy in Charleston, S. C., and Pearl Harbor,

Hawaii. Marines are responsible for their own bases.

The Navy's responsibility covers not only its own bases but also any ordnance below the low-tide line.

When the course is completed, all officers and enlisted men, Regular and Reserve on active duty, are eligible to go to the six-week Special Weapons Disposal course. This covers detailed instruction in the recovery, evaluation and disposal of special weapons.

The Navy EOD course is open to both officer and enlisted men, and runs for 25 weeks. A Top Secret clearance is required.

For enlisted personnel, GCT of 55 and Mechanical-Electrical or Mechanical of 50 is required. Those who are not qualified scuba divers before enrollment must first attend the Underwater Swimmers School in Key West. Officers must sign an agreement not to resign during the course and to remain on active duty for 18 months after graduation.

UDT personnel assigned the SPC 9954 and who are qualified second class and scuba divers will be authorized to enroll in the Navy Basic EOD Course at the U. S. Naval Explosive Ordnance Disposal School three weeks after the convening of each class.

#### Underwater Demolition Teams

One of World War II's best-kept secrets was the existence of Navy Underwater Demolition Teams—the famous "frogmen" who etched their page in history all over the world, most effectively, perhaps, in the sign that greeted the first wave of troops at a Pacific island:

*Welcom to Guam, U. S. Marines,  
USO two block to the right.*

*—Underwater Demolition Team  
Four.*

The Navy is responsible in joint operations for the destruction or removal of all man-made or natural obstacles, underwater or to seaward at the high-water mark, that interfere with the beaching of landing craft. To accomplish this, to reconnoiter the beaches, and to obtain information vital to the landing, the Advance Force Commander creates an underwater demolition group. The normal technique is to employ groups of swimmers who place and detonate demolition charges against the obstacles.

During World War II, Hitler boasted that his forces would repel any assault on his "Atlantic Wall" in exactly nine hours. Shoring up that Wall were complex minefields which extended from Norway to Spain. As

*(Continued on Page 55)*



Doctor Borhegyi carefully carries prize Mayan pottery to a safe place on shore where he may examine it more closely.

Ancient pottery discovered in Guatemalan sacrificial lake.



# MAYAN UNDERWATER ARCHAEOLOGY

By Lon W. Mericle

(Milwaukee Public Museum Photos)



Diver Lon Mericle, author of article, passes Mayan pottery to Dr. Stephan Borhegyi, director of Milwaukee Public Museum.

SKIN DIVER—March 1961





Doctor Borhegyi measures incense burner recovered from Lake Amatitlan.

**E**XCITEMENT electrified the occupants of the station wagon as we traveled to Lake Amatitlan on our first day of diving for Mayan artifacts. Seven of us crowded into the seats and the rear end was loaded down with our equipment consisting of six 72 cubic foot air tanks, assorted diving gear and photographic equipment which filled the car to the roof. The heavily weighted car presented a mighty low profile as we left Guatemala City that morning at 9 a.m.

Lake Amatitlan is located 17 miles from Guatemala City, however, mountains of no small proportions stretched the trip out to over an hour.

Dr. Stephan F. Borhegyi, archaeologist and director of the Milwaukee Public Museum, gave the directions. He is very familiar with the Mayan country having spent five years here for the Carnegie Institute and the Guatemalan University of San Carlos.

As we rounded a mountain curve we got our first glimpse of Lago Amatitlan. It is cupped in by volcanos and mountains, in some spots rising vertically many hundreds of feet.

The mid-morning sun shimmered on the gentle waves and the clear air of the Guatemalan highlands presented us with a magnificent view. The lake is seven miles long and averages 2½ miles wide. We wheeled down the mountain grade and soon the bell tower of a snow white church rose above the foliage, and so we arrived at the village of Amatitlan, a pueblo of 5000 people. Here the river outlet leaves Lake Amatitlan and flows 65 miles to the west and 5000 feet down to the Pacific Ocean.

Crossing the river on a primitive arched bridge we were astonished to see the river banks lined with women washing clothes while their children played and bathed.

"There are thermal springs all along the river near the lake," explained Dr. Borhegyi. "That is the reason for all

the washing and bathing. For 25 centavos we can take a steam bath right here next to the bridge" he said, pointing to a neat white stucco building. Later we were to examine these natural steam baths and more than one of us could visualize ourselves retiring here in the land of "Eternal Spring", building a series of steam rooms and watching the centavos roll in without any effort on our part.

Soon we left the paved road and as we rounded the lake shore we ate dust until we were forced to close the windows.

Guatemala was in its winter season, "Better this way" said our cheerful guide, Dr. Borhegyi, "During the rainy season these roads are impassable, so you are enjoying the lesser of two evils. Or possibly would you prefer to carry your air tanks all the way?"

Soon we came to a likely place to dive so we stopped by the roadside about 300 yards from the lake. Dr. Borhegyi asked a native woman from a nearby hut if we could pass through her property to get to the lake. He was the only member of our party who spoke Spanish, the rest of us, to make ourselves understood, had to resort to much waving of arms and gesturing in between hurried consultations with our English-Spanish dictionary.

This section of the lake is called "Lavadores" or laundry because it too was used to wash clothes in the shore waters fed by thermal springs. The springs issued forth hot water in small quantities so that there was little danger of scalding oneself as it dissipated in the 70 degree lake water. The surface water would remain warm for some distance from shore but a foot below the surface the water was unaffected. The shoreline was composed of sheets of lava well worn by the centuries of Mayan habitation.

Dr. Borhegyi explained, "The Indians always lived in this area because of the thermal springs. The reason we are diving here is because I believe they



Top of pottery incense burner in the form of a jaguar head.



Diver Vern Burkart examining 2000 year old Mayan pottery he recovered.

worshipped these springs and would hold pagan religious ceremonies somewhere in this vicinity. Our job is to recover some of their pottery. Pottery is virtually indestructible, and where it can be broken it is unaffected by its long submergence in the water."

Vern Burkart and myself, members of the Midwest Amphibians and the two most experienced divers, hurried to climb into our wet suits, put on our tanks and beat the others out of the honor of being the first to recover a piece of pottery. We agreed to dive in opposite directions.

The bottom dropped off rather sharply to about 40 feet, then leveled off to the usual mud silt inland lake bottoms we have in Wisconsin. We gleefully paddled our way out into the lake and about 150 yards from shore struck out along the shoreline. The visibility was the same as our Wisconsin lakes, 6 to 8 feet, the only difference was that here was no thermocline.

Finally I found a charred bone and jubilantly came to the surface to proclaim my find, however, Vern had already found an inconsequential fragment of pottery. As we made our way to shore we were greeted by the sight of several pottery pieces found by one of the "novice" divers, Sam Williams of Detroit, Michigan.

Sam, being more cautious, had followed the shoreline at a depth of 15 feet and only 75 feet off shore. "This," said Dr. Borhegyi, "is just what I had hoped we would find."

We scurried back into the water to survey the situation and found that the deposit ran for only 75 feet parallel to the shore. The weed bed ended at 15 feet and the pottery lay at about a 30 degree slope ending where the lake bottom leveled off at 35 feet. The silt stirred up by our work soon made visibility very poor, but we all came to

(Continued on Next Page)



## MAYAN UNDERWATER

(Continued from Last Page)

shore with as much pottery as it was possible to carry in our arms. The pieces were for the most part various types of incense burners. That confirmed the fact that they were either placed on shore or thrown into the water from the shore during religious ceremonies.

We then waited for the water to settle while we continued exploring the shoreline to try and find other pottery deposits. After an hour we returned to the "mine" and retrieved additional specimens. All too soon our six air tanks were sucked dry and we spent the rest of the day exulting and examining our treasure. Finally we stowed our gear and artifacts into the station wagon and drove back to the village to celebrate at a cantina with several bottles of *cervesa frio* (cold beer). So ended our first day of diving, one day of an exciting adventure that started nearly two weeks before when we left Milwaukee at 6 a.m. on a cold December morning on our 3700 mile drive to Guatemala.

In the next three weeks we dived in many sections of the lake and succeeded in finding five locations where pottery was found. The locations were characteristic in that they were always confined to a small length of shoreline. The deepest spot we ever recovered pottery from was at a 50 foot depth, however, with the help of our underwater lights we went as deep as 110 feet in exploration. Some localities had rocks of various sizes and some places had just lava sheets. In some of the

lava sheets we found partially imbedded pottery. Dr. Borhegyi theorized, the Mayans must have thrown the pottery into the molten lava flow before it entered the water. However, the greatest success was in the silt and gravel of the lake sloping bottom where Vern and I spent many a tank of air digging in clouded water in hopes of finding pottery underneath the top layer of silt which indicated to us that more pottery was a possibility in that area. In areas where rocks were located we had to be careful not to work above each other, as many times we could hear a dislodged rock tumbling on its way down the grade.

The fact that our diving was under the direction of a trained archaeologist meant all the difference in the world. I believe indiscriminate searching would have had small chance of success on a lake the size of Amatitlan.

We also attempted to discover pottery in three other lakes in the Guatemalan highlands, Lake Ixpaca, high in a volcano crater, Lake Atescatempa which is in sight of the El Salvador border (both were dismal failures as far as skin diving was concerned) and Lake Atitlan, the answer to any skin diver's prayers. It has a setting among the mountains that has earned it the reputation of being the New World's most beautiful lake. Visibility compares with any salt water I have ever dived in, including the Florida Keys and the Bahamas. Seventy foot visibility was the rule. The weed beds started at 50 foot depths while most waters filter out the light long before that. The rocks underwater were covered with a

marine moss growth about two inches thick, so the attempts to find pottery were without success. The water temperature was 68 degrees and the lake has a maximum depth of 1050 feet. Fishing is a major source of food for the twelve villages around the lake. We saw many fish in the six pound class.

The mountains around the lake are so steep that ten out of the twelve villages have their only entrance via the water. And strange as it may seem practically none of the natives swim.

Vern and I took a busman's holiday and drove to the Pacific shore one Saturday for a swim. The beach was seemingly endless and formed of black volcano sand. The shallow water right off shore contained sand dollars by the million. It was a pleasant change to surf bathe and ride the breakers after the mild waves of the lakes.

In all we spent 24 days diving and hated to think of returning to the Wisconsin winter weather. Finally our field trip was over and we trekked to the northlands, and true to form a paralyzing blizzard descended upon Milwaukee the evening of our return and dumped 16 inches of snow on our well tanned heads.

Guatemala City is readily accessible by plane. Scuba equipment and air are for rent at the Barracuda Shop, run by a very fine chap, named Edwardo Estrades who extended us many favors while we were in his territory as I'm sure he would do for any diver.

When will you be leaving for Guatemala? Let me know and maybe we can form a group. ➤

## SKIN DIVING TRAVEL INCENTIVE?

THE NATIONAL Association of Travel Organizations, which represents all segments of the U.S. travel industry, today alerted its members to a new breed of recreation travelers—skin divers, who are enthusiasts about what is possibly America's fastest growing hobby.

The Underwater Society of America estimates 5 million Americans have made the primary skin diving investment for masks, fins and snorkels.

The real enthusiasts, the scuba divers, spend an estimated \$250 average for tank and harness, face mask and tight-fitting suits of neoprene which allow them to continue the sport all year, even in sub-zero temperatures.

The underwater enthusiasts are organized into 531 recognized U. S. clubs, who hold regular meetings, give

lessons, stage exhibitions and contests—and do a lot of group traveling. "Skin Diver Magazine" estimates its readers in furtherance of their hobby travel 1502 miles a year by auto, 372 miles by boat and an astounding 2651 miles by air.

The average skin diver is 26.2 years, according to the survey, but toddlers also go for snorkeling. And, in Florida particularly, oldsters have taken up skin diving as "a new incentive to their lives." A favorite spot for them is Warm Mineral Springs, near Venice, Fla., where water in the big, fast-flowing pool averages 85 degrees.

You are likely to find skin divers, however, in almost any body of water and at any time of the year. The Aquanauts Club of Washington, D.C., likes to explore underground rivers in the caves of nearby Appalachian Mountains. Californians have fun (and make a little money, too) sucker-dredging for gold in the rivers

of the Mother Lode country. There's a brisk sale to skin divers of books and maps detailing locations of sunken treasure ships.

An underwater coral reef snorkeling trail has been developed at Virgin Islands National Park in the gin clear waters of Trunk Bay, St. John Island. A 21-mile long Coral Reef Preserve State Park has also been established at Key Largo, Florida, to preserve unusual coral formations for the enjoyment of skin divers. The Atergatis Divers of Des Moines, Ia., stage an annual ice diving contest, waiting first until the ice is a foot thick.

How do you become a skin diver? "Skin Diver Magazine" lists dozens of books of instruction. There's also a 45-minute recording which gives verbal instructions. Best bet, however, is to contact your nearest club. For a list of them write the Underwater Society of America at P.O. Box 724, Station A, Champaign, Illinois. ➤





Karl Johan Fosaa photographs the entrance to a cave off the Faroe Islands.



The author, right, and Fosaa just before a dive in a rocky Danish cove.

*Diving is great off Denmark, especially off . . .*

# FAROE ISLAND



**By ARNBJORN RANDRUP THOMSEN**

(Photos by author)

**A**BOUT six years ago Karl Johan Fosaa and I became the island's first skin divers. Our equipment consisted only of masks and we dived the cold northern waters without exposure suits. Some time later two others joined us and in 1957 we formed the Torshavn Frogman Club (or in Faroese: Torshavnar Froskmannafelag).

The Faroes lie 62 degrees north latitude off the coast of Denmark, southeast of Iceland. The sea is seldom warmer than 8-9°C. (46.4-48.2°F.). On the other hand the winter temperature never reaches zero (32°F.) because of the Gulf stream. Winter water temperature is usually 4-5°C. (39.2-41°F.).

But in spite of the chilly water the underwater scenery off the island makes it a diver's paradise. We have great quantities of seaweed and about 135 species of fish. We generally meet coalfish, flounder, catfish and cod on our diving trips.

As there were no other divers in the area we had to read everything we wanted to learn about the sport. The more we found out the more we wanted scuba equipment and exposure suits. About four years ago we became interested in underwater photography and after many experiments made three underwater camera cases of wood. This was not the best material, but we succeeded in taking some underwater photos. Now we have complete diving equipment, suits and four underwater camera housings, three metal and one rubber.

It seems quite funny that we Faroese frogmen who are now fully equipped not long ago had never seen or talked to other divers. We had all our equipment before we met other divers. Because of this we learned to work and experiment without help and have great patience and persistence in our underwater work.

Most of our diving is outside the

capital of the Faroes, Torshavn. Here we tested our first underwater cameras, lungs and other diving equipment. In many places around the island the sea has carved magnificent caves and deep subterranean tunnels, some extending through the island.

There are a lot of wrecks off the island, one is the wreck of the "Norske Love" which sank in the late 18th century. We plan future dives on this wreck and others in the area. About 150 years ago several cannons from the old Skansin fortress at Torshavn were tossed into the sea. We hope to find some of these relics this year. Another site we plan to explore is the old historic village of Kirkjubø where a part of the thousand year-old bishop's building was swept into the sea during a storm. At Kirkjubø we know there are many places that were once on land but are now submerged. We feel that our future dives in the area will be very interesting. »



## By GENE PARKER

(ART BY AUTHOR)

**T**HE NORTHEAST coast diver is used to a relatively moderate surf, fair underwater visibility, and quantity . . . but not a great variety of fish life.

To such a diver the Pacific off Southern California is an underwater extravaganza.

So many things are different . . .

The sun on the ocean horizon signifies the end . . . not the beginning of a day of diving. Prevailing winds blow toward the shore . . . and in the afternoon frequently pile up an awesome surf. Instead of neat old New England cottages peeping out of green pines and spruce at sparkling waves crashing on granite rocks . . . the majestic Pacific thunders on reefs and on great cliffs terraced with modern architecture. Arid brown hills and mountains wrinkled with arroyos line the sea. Everyday a brilliant sun against a bright blue sky is almost inevitable. On the East coast one gambles that the day will be clear . . . and is frequently disappointed by cold foggy rain. Off Maine fir clad granite islands dot the sea like ships. Off Los Angeles distant peaks rise steeply thousands of feet out of the sea to form Catalina, San Clemente, San Nicolas and Santa Cruz islands. These sparsely vegetated mountainous islands are populated by deer, wild boar, goats and cattle, and on Catalina

by buffalo. From the Los Angeles shore one sees little of the humming crowded city of Los Angeles. Indeed, Palos Verdes looks almost uninhabited.

Underwater the first glimpse of the Pacific excites the Eastern diver into a frenzy of submarine rubber necking. The clear water makes it a joy to observe the brilliant hued fish, colorful fauna, alluring reefs, mysterious caves and fissures. North Atlantic divers often sense . . . but can't see see . . . wary, big fish at distances that the clear Pacific waters render quite visible.

This same Pacific water clarity can be deceptive. You plunge downward to intercept a big fish and discover it is 70 feet deep instead of 30.

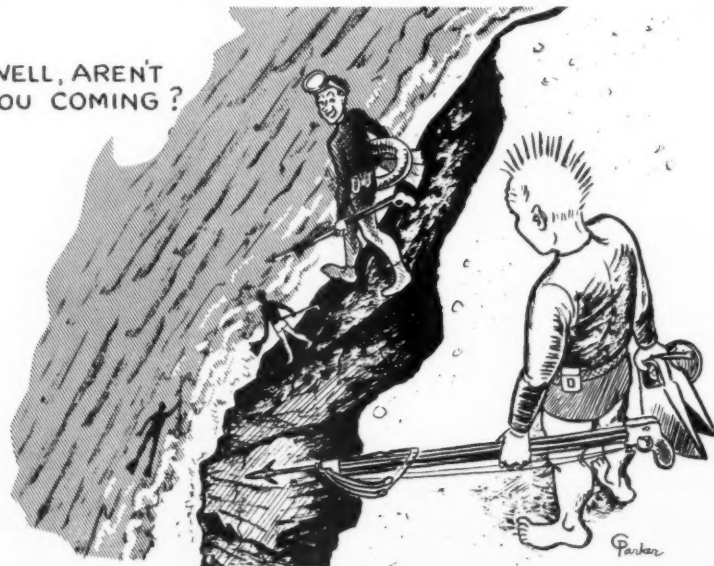
Swimming through a kelp forest is like soaring through a forest of tall trees. Overhead the daylight peeps through kelp mats like daylight filtering through tree top foliage. Multitudes of fish wander or hide among the fronds of kelp. One approaches the denser thickets of kelp cautiously, spear gun ready, peering into the shadows for a worthy target. The thrill of the hunt is comparable to stalking game in a jungle.

California divers ask inlanders "Why do you try for records . . .?" The answer is that some inlanders try for records because they don't have the challenges or the thrills of ocean diving . . . there isn't really much else for them to do except explore, or in restricted areas, to spear rough fish. >>>

# A MASSACHUSETTS YANKEE IN KING NEPTUNE'S COURT

(SOUTHERN CALIFORNIA KINGDOM)

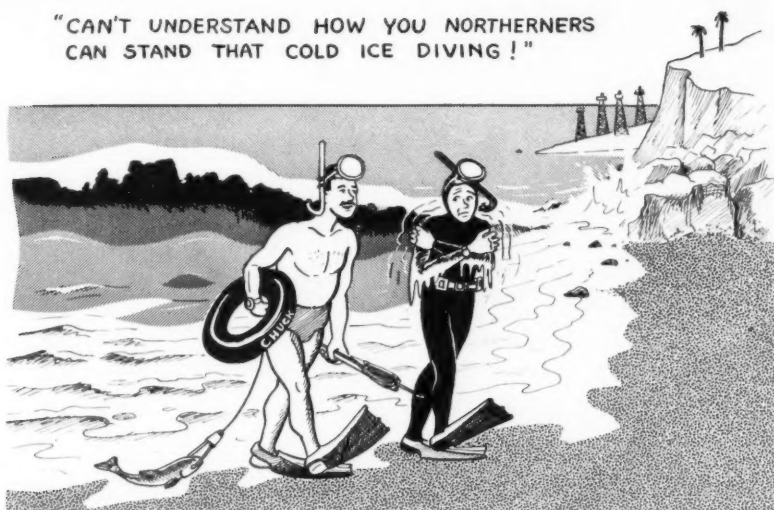
WELL, AREN'T  
YOU COMING?



California divers descend rather steep cliffs with complete aplomb to get to a good diving area.



"CAN'T UNDERSTAND HOW YOU NORTHERNERS  
CAN STAND THAT COLD ICE DIVING!"



The Pacific in May felt colder than Lake George in New York in January.

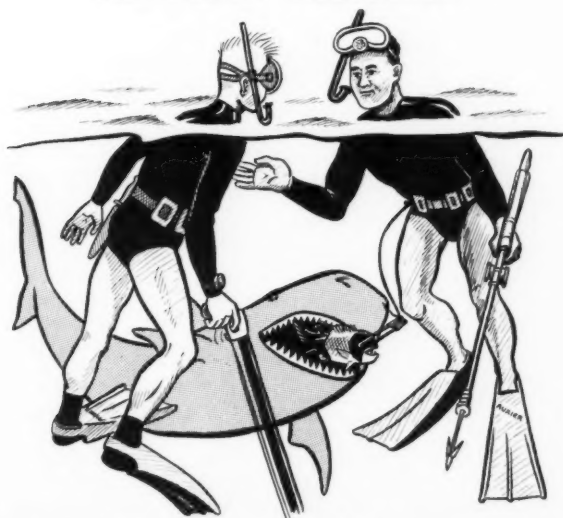


In some places the water drops off  
very suddenly . . .



And in others you fight a fair surf.

"MOST CALIFORNIA SHARK STORIES  
ARE GREATLY EXAGGERATED"...



After one dive the skipper informed us that a couple of sharks  
had been cruising around us.

HEY GAFFNEY, THERES A BIG ONE! HEY GAFF...



Seals are found all along the coast.  
At Catalina a playful young seal  
actually brushed against my face  
mask, most interested in my string of  
fish.



There is no danger (?) involved in  
grabbing "bugs" because they can't  
bite . . . but they do have strange  
bedfellows in the same rock apart-  
ment.



"Abs" (abalone) are a big deal.  
You wrench them off rocks with a  
tire iron, thin slice, pound, dip and  
fry them for a different, and very  
good taste.



# HOLLYWOOD UNDERWATER . . .



**“YOU TRIED TO KILL ME . . . !”**  
“Yes, I did.”

“But . . . but why? Just a few hours ago you saved my life.”

This was the tense dialogue witnessed by reporters from “Skin Diver Magazine” on a wave tossed fishing boat in the San Pedro Channel, the current stage for “Sea Hunt.” Several men steadied the camera on a boat moored directly alongside, electricians braced themselves outside of camera range with powerful lights to combat the grey sky, sound men struggled to keep the microphone boom in position . . . and at that moment a light plane, leaving Long Beach Airport, passed overhead.

“Cut!” Director Pete Adreon ordered. “We’ll try again,” he continued as the plane moved away.

“Quiet please everybody,” his assistant, Bill Owens, shouted. “This is a take.”

“Sound” came a voice from in the cabin, where the delicate sound equipment was being operated.

“Speed,” called cameraman Marquard. The camera was rolling.

The actors waited.

“Mark!” shouted another man, snapping down the familiar striped board to synchronize sound and picture.

“Action!” ordered Adreon quietly.

The scene started again. This time, in spite of human and natural obstacles, the few lines were spoken and recorded successfully.

“Cut . . . print!” This from Director Adreon, and everybody relaxed.

Everybody except Lloyd Bridges, Mike Nelson to Sea Hunt fans, who had appeared relaxed throughout. Calm and confident in his portrayal of Mike, Bridges has become a diver’s diver and “Skin Diver Magazine” wanted to find out how and why.

We had met Bridges early that morning. A rare California rain was falling as we boarded the fishing boat to head out beyond the breakwater where the camera boat was waiting along with the well-known “Argonaut,” several small boats and a Coast Guard cutter. On the trip out we had a chance to talk.

The most noticeable thing about Bridges is that he does not seem “Hollywood,” but more like the character he portrays. Perhaps that’s why the series has been successful

*(Continued on Next Page)*



SDM STAFF FEATURE . . .

ON LOCATION WITH

# SEA HUNT





Taken during actual shooting, photo shows sound man holding microphone and lighting technicians in position.



Associate Editor Ross R. Olney confesses deep, frustrated desire to become actor. Lloyd Bridges listens sympathetically.

(Continued from Last Page)

and continues to grow, because its lead character is only being himself. In any case he is friendly and sincere, anxious to do an even better job, worried and constantly checking on the technical difficulties that make precise accuracy in diving almost impossible.

The boat pitched and dipped in the heavy ground swell as it rounded the breakwater. Off in the distance, through the haze, the other boats became visible. As we watched, the Coast Guard Cutter hurried up alongside the Argonaut and a familiar figure in a grey wet suit climbed from one boat to the other. The camera boat stood off filming the event as the director shouted instructions across the water.

Bridges, according to the Sea Hunt crew, seldom uses a double. This was one of the times. The figure in the wet suit was Mike Nelson but the distance between boat and camera was too great for recognition. Normally, on all underwater shots and of course on all close-ups, Bridges is the actor.

As in the case with many actors, Bridges career started in grade and high school and continued in college where he attended UCLA as a political science major. He admits that his father wanted him to be a lawyer and was willing to pay his way with that career in mind. But dramatics took the main part of his time and even then he knew acting was for him. His father, he points out, is now quite happy with the change of plans.

"Tragedy in a Temporary Town" is one of Bridges triumphs. For his role in this noted TV drama he received a nomination for the coveted "Emmy" award, TV's highest honor. Well-known on TV, he has appeared on many outstanding programs including "Playhouse 90," "Alcoa," "US Steel Hour," and "Zane Grey Theater." Motion pictures are also home to actor Bridges, with appearances in such recognized films as "High Noon," "A Walk in the Sun," "White Tower," and "Home of the Brave." His future plans include an appearance on the popular television series "Twilight Zone" and an underwater spectacular to be made in Florida for viewing on April 2, if, Bridges adds, his work on Sea Hunt will permit.

As we neared the shooting area, it became obvious that

Sea Hunt is Bridge's first love. His eyes narrowed as he watched the action.

Three times the Coast Guard Cutter pulled alongside the Argonaut before the director was satisfied with the realism. Our boat stood off and watched as Bridges explained the plot. A license plate found on the bottom of a Florida bay by Mike Nelson uncovers a years old murder. The captain of the boat on which we were waiting was, in the script, the murderer who was instrumental first in saving Mike's life and then nearly taking it underwater with a huge, weighted net.

Bridges began to don his famous grey wet suit.

"What happens when you are shooting a script with a plot set in a tropic area . . . do you go there or shoot it here?"

Bridges grinned. "Usually we shoot it right here off California though we do sometimes go on location for special effects."

The water looked cold and grey and forbidding.

"But you wouldn't be wearing a wet suit in the tropics . . . What do you do then?"

"I go in without one," he answered simply.

The crew later confirmed this. These men, experienced technicians who have worked around actors for years, have nothing but high praise for Lloyd Bridges. "He never complains . . ." said one. Another remarked, "He dives into that cold water in nothing but swim trunks like he enjoys it . . . Man, not me!"

Bridges does enjoy it. He loves swimming, one of his hobbies apart from diving and tennis. His home is in Westwood, a part of Los Angeles, but most of his free time is spent with his family at their beach home in Malibu, right next to the Pacific ocean. Married and the father of three children, Bridges is enthusiastic about the way his two sons and young daughter are taking to swimming and diving.

Many have remarked at his physical condition, necessarily excellent for his rigorous role in Sea Hunt. Fifteen minutes of exercise every morning, practiced without fail, keeps him physically fit. That, he explains, and the diving and swimming he does for several hours each day





Lost in Mike Nelson characterization, Bridges rehearses lines before scene is put on film. At left is prompter.



Actor John Marley as fishing boat captain admits he tried to kill Nelson with net. Technicians are out of camera range.

before the cameras. Push ups from the bed, flutter kicks and vitamin pills whenever his wife insists is his health routine. And one other thing in which he has great faith . . . standing on his head for a few moments each morning.

During the day we watched the shooting, the precision, thought and care that goes into each segment of *Sea Hunt*. Rehearsals, dress rehearsals with lights and microphones, and finally the take. And then the re-takes until everything is just right. The crew works as a team, each man obviously proud of the success of their series and anxious to continue its high standing. A testimonial to the popularity of *Sea Hunt* is the continuing sponsorship by such major companies as Standard Oil.

Lunch break, with commissary box lunches, was a pleasant interlude in the day's hard work. The fleet of boats pulled anchor and headed back behind the breakwater to smoother water. Sea sickness, usually not a problem, had plagued the crew that day. The water was unusually rough and personnel, especially actors not used to working on a boat, had to be taken ashore to regain their equilibrium. Others, in the same state but true to the tradition of the theater, carried on in spite of slightly green faces, commenting that it was fortunate the series was shot in black and white.

Bridges himself, not prone to sea sickness, still ate a very light lunch. He admits an overpowering fondness for ice cream and other desserts and feels that perhaps if he goes easy on one meal he can enjoy the next to the fullest, and still stay in shape.

After a day's filming on tossing boats, it was a pleasure to visit the *Sea Hunt* sound stage at ZIV-UA Television Productions in Santa Monica. On this giant stage they have another Argonaut, motorless and mastless and resting on stacks of tires for easy rocking. Behind the boat is a huge screen on which they rear project ocean scenes. Watered down from a sprinkling can, Mike Nelson can stand on the rolling deck of his sleek cruiser and, with the rear screen full of ocean, appear miles out at sea.

Leaving the stage to return to the office and work, "Skin Diver" reporters stopped for a last look at the elaborate *Sea Hunt* layout. The cameras were rolling, the stage was quiet but for actors speaking their lines.

The grizzled old sheriff, on the deck of the slowly rolling Argonaut, was speaking to Mike. "You can't dive here because I say so, that's why . . ."

Mike turned slowly to stare out over the rail, across a group of technicians, electricians, sound men, script people and all the others who make the series possible.

"But . . . but this is open ocean . . ." he argued, waving his arm.

You know, we could almost see the white topped waves of some Florida bay. And that's why the series will continue to grow . . . because Mike Nelson DID see the water.



Camera boat "Long Fin" with director and technicians waits to take aboard "Skin Diver Magazine" reporters.

An expert diver both on and off television, Bridges classifies diving, swimming and tennis as his major hobbies.





# THE DIVERS FLAG



SHOW THIS TO YOUR BOATING FRIENDS AND MARINA AND YACHT OWNERS AND OPERATORS. SPREAD THE WORD . . . PUBLICIZE THE DIVERS FLAG.

1. The flag to be 4 units high by 5 units wide, having a transverse white stripe of no more than 1 unit width. The stripe should travel from top left to bottom right. The background color to be orange-red.
2. Divers Flag on a centrally located movable float as a surfacing point for three or four divers.
3. Recommended that 100 feet radius be the "boat keep clear" area.
4. *Temporary* markers of a diving meet water area . . . away from boat routes.
5. A rule of thumb that the flag be one inch long every foot of length of the boat flying the flag (minimum of 14").
6. Recommend that minimum size of (diver towed) float Divers Flag be 14" long horizontally.
7. Although many boats fly the Divers Flag as a personal pennant, it has been urged that the flag be lowered when the boat is anchored . . . unless diving is in progress.
8. Since our flag symbolizes our sport, many clubs and councils agree that it can identify divers with good sportsmanship. The flag bobbing in the wrong places could be bad public relations. 🐟

## TOTAL SUB

Seacraft



1 man \$249.50

2 man 399.50

### features

- Automatically stabilizes at any desired depth on slow tow.
- Will not nose dive or tail dive.
- Provides complete protection from obstacles and underwater life.
- Automatically surfaces slowly when tow stops.
- Can slow roll or snap roll.
- Ideal for dealer rental or show display.

SEE OUR 1961 CATALOG  
for a NEW CONCEPT in SKIN DIVING.  
DEALER INQUIRES INVITED.

SEACRAFT INDUSTRIES, INC.  
3A Church Street, Wilmington, Mass.

Rush me your Seacraft catalog. I am enclosing 50c to defray cost of mailing which will be deducted from my first \$5.00 order.

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ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_





Frigid diving platform. Relaxing between dives is Jack Wohlwend as author looks on.



Preparing to descend into icy waters is, left to right, Larry Waldum, author, and Wohlwend.

# Diving . . . NORTHLAND STYLE

By JACK KIRKWOOD

(Photos by Herb Strak)

**J**ANUARY, the dead of winter. The air temperature is about 20 degrees F, the water temperature is somewhat warmer, about 32 degrees F. Jack Wohlwend, Larry Waldum, and myself decided it would be a perfect day for diving. A bright sun was shining. There was no wind. So the three of us along with Bud Cwodzinski as tender and Herb Strak as photographer piled ourselves and our gear into a car.

We left Superior, Wisconsin, about 10 a.m., went through Duluth, Minnesota, and headed up the scenic north shore of Lake Superior. Driving up the shore, we kept ten eyes peeled for the end of the massive ice floe which piles up at the western end of Lake Superior for about 40 miles. Sometimes it is closer to Duluth and Superior and at times further up the lake.

One of our favorite haunts is about 50 miles up the shore, at Split Rock Lighthouse. Just north of this point is another point called Gold Rock. At the foot of Gold Rock, about 50 feet from shore, is the wreck of the ore barge "Maderia" which went down in the "big blow" of 1905.

After donning wet suits, weight belts, tanks, regulators, depth gauges, compasses, etc., we begin the long hike to the diving site. The hike is about three blocks; down the side of a cliff for about a block and a good two blocks across the ice to the diving site where the ice is broken up and the water free. In the winter months we have a happy feeling about us as we hike to the spot but we usually drag ourselves back when we are through, as three blocks is a good hike with doubles on. When there is

a good northeast wind though, the cove is clear of ice and we can snorkel the two blocks.

Standing at the edge of the ice, which is probably the greatest diving platform in the world, we observe the bottom. With the sun at the right angle, we can observe the midsection of the barge, which is in 20 to 35 feet of water. The bow is in about 80 feet of water and the stern about 135 feet.

This trip, on this day, makes the third time at the site this winter and there is one unpredictable danger which we have encountered only once before . . . the presence of "night-ice". This is very unexpected and dangerous. It is a thin coating of ice over the free water, about one-half inch thick. To get in the water we must break a hole through this layer.

Next, on all fours, we ease ourselves into the water letting our bodies and our mind get adjusted to the fact that we are about to enter water with temperature variations only a few degrees from freezing the year around. The water temperature now is about 32 degrees F, and the deeper we go, the colder it gets. Once in the water we allow our faces to remain under the surface, breathing through our snorkels to get used to the coldness of the water. This process usually takes from two to three minutes. When our faces have become so numb we don't feel the cold, we begin our descent.

(Continued on Page 62)



Well spaced to prevent too much weight on one spot of ice, divers head home after frigid dive.





Tom Mariatt giving instructions to two of the divers before they leave the command post. Divers are Bill Klapperich and Bob Kowalski. Note "MA" on back of Mariatt's hand. (Scott Ide Photos)



After leaving the water at the end of the exercise, a hot cup of coffee and post-battle strategy is enjoyed by three Midwest Amphibians. Left to right, Ralph West, Doug Rose and Ron Eggbrecht.



Commander Arnold P. Brown congratulates Bill Klapperich and Robert Kowalski on the cooperation given the Coast Guard's Port Security Program by the Midwest Amphibian Club.

# I N V A S I O N

By RICHARD W. JENKINS

SEPTEMBER, 1960 . . . Operation Jones Island . . . Time: 0400.

The air is cold, the sky is clear and a sharp wind is blowing in from over the water. The shadows seem darker and the somber silence has an eerie cast to it as you look down on the island from the bridge leading from the city. There seems to be more darkness than normal as only the lights of the foreign ships shine down on deserted docks and the lights from the oil company's windows look small next to the giant white gasoline tanks. No noise comes from the booms of the ships, the laughter of the fishermen is gone and the usual sound of many car radios is dead.

Nothing is moving on the island except the Coast Guardsmen with their determined steps as they make the rounds of their posts. From the city the building lights poke through the darkness to throw a glimmer from the smartly pointed bayonet over the right shoulder of the nearest guard.

The young Coast Guardsman from Arizona looks out over the cold water and as he passes a shack of the dredging company the shadows seem to reach out to grab him. He shivers as a gust of wind goes through his jacket and he wishes he was drinking a warm cup of coffee instead of being on watch. Then 100 yards down the mile long island he hears the shrill whistles of the guards as they capture four of the invading UDT men.

Impossible . . . ? It definitely is possible and that is why the Midwest Amphibians, a civilian skin diving club, and the United States Coast Guard cooperated in this exercise to give the Coast Guard extra training in Port Security Defense.

Much time and effort was put into this third annual exercise and the members of the Midwest Amphibians Club use their imagination to think of ways to beat the Coast Guard. It is not easy with boats carrying huge spot lights patrolling the water and a 15 foot retaining wall to scale on the east side of the island. Also there are about four times as many guards on duty as there would be in war time and they know we are coming in during the hour of 8:00 p.m. September 16th to 8:00 a.m. September 17th.

At the Reserve Center you can find some captured skin divers drinking coffee and laughingly telling each other how one was killed twice and the other three times. The rules state that a man can continue in the next



four hour period of attack even though he is killed or captured because the operation lasts all night and there wouldn't be enough enemy and/or Coast Guardsmen left otherwise.

Last year the Coast Guard lost a patrol boat because they went to the rescue of two "women" in a boat with motor trouble. After doing that trick once it doesn't work the next year. They sometimes yell dirty pool to some of the club's action but still under a real attack they realize the enemy might know quite a few more tricks than the club.

This year the Coast Guard came out with the old adage "you can fool some of the people some of the time, etc." and they knocked out the club's Civil Defense truck carrying two skin divers in deputy sheriff's uniforms and two skin divers as newsmen. They were easily captured since all participating skin divers had to have an "MA" in two inch letters on the back of their right hand and the guards at the road block wouldn't be bluffed. They demanded to see everyone's right hand before they could enter.

The weapons used in this Port Security Defense Exercise were flash lights by the Coast Guard and road flares and talc bottles by the Midwest Amphibians. I would like to add that talc on undressed blues does not make the reservist very happy. The diving equipment used was wet suits, fins, masks and snorkels with no lungs, since the visibility even in day time is only from zero to three feet.

With about 30 divers participating and 109 Coast Guardsmen in the operation the divers felt that the odds were about right as they knocked out 25 enlisted men and 3 officers. Two of the officers were killed when the command post was blown up. One enterprising diver got on top of the sewage disposal plant and ran a Divers Flag up to half mast on the flag pole which is the highest point on the island.


By five o'clock in the morning approximately 90% of all installations on the island were knocked out and one diver with no more objectives to blow up put big MA's on the side of fifteen railroad tankcars with his talc bottle.

Three members of the feminine gender also were in the operation

and did as well as most of the men.

The Midwest Amphibian Club consists of approximately 40 members and has been active for eight years. They have participated in fish surveys for the Wisconsin Conservation Department, worked very close with the Civil Defense Program and have been instrumental in instructions for the Milwaukee Police Department Diving Squads. The club has furnished instructors for the new Y.M.C.A., the Jewish Center and various pools throughout Milwaukee and the surrounding areas.

The Coast Guard congratulated the club again for their fine cooperation and jokingly suggested that the MA on their hands could read something else than Midwest Amphibians as they were beat so bad. But actually the operation was of a very serious nature as it is the highlight of the Coast Guard Port Security Program. The event was covered by newspapers, three radio programs and two TV shows.

All members of the club are eagerly looking forward to next year's challenge by the Coast Guard because this year made it 2 out of 3 for the Midwest Amphibians. 

## THE FISHES by Kohler

THERE'S JUST NO-PLACE  
LIKE THESE **SOUTH**  
**SEA WATERS!**



AH-H-H, THIS PRISTINE  
WATER! THE LURE OF  
MANY-HUED CORAL FORMATIONS  
BECKONING THE UNDERWATER  
ADVENTURER! (SIGH!)



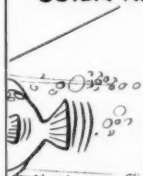
AND THE **THRILL** OF FINDING  
MYRIAD NOOKS... MYSTERIOUS  
CRANNIES - ALL OF THEM  
ENCHANTED HIDE-AWAYS,  
PROMISING ROMANCE....  
EXCITEMENT... THE UNKNOWN!



YES, INDEED! THESE  
**TROPICAL WATERS** OF  
THE MAGICAL **SOUTH SEAS**  
ARE **SOMETHING** TO BUBBLE  
ABOUT!



WELL...I'M  
OFF TO THE  
OUTER REEF!

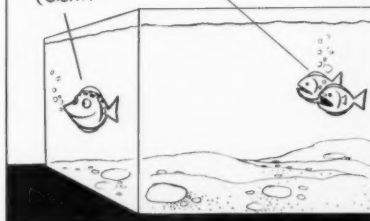


WHAT'S WITH  
HIM?



OH, HE GOES A LITTLE  
**STIR CRAZY** WHENEVER  
THE WATER IN HERE GETS  
OVERHEATED.

(SIGH!)





# DRIFTWOOD



... a little satire here, a little wit there (as one fellow wrote, "that's about half-right"), a little humor everywhere to bring maybe a smile or two ... that's the whole purpose of Driftwood. We're here to share a joke, make a joke, play a joke, take a joke. Driftwood will never be more than it was intended to be ... a collection of wit, good humor, light prose and poetry. The column is not serious, grave, solemn, staid, or sober ... it's strictly for a chuckle, a laugh. We aren't going to be serious here—we're going to live it up. (We've got the rest of our lives to live it down). Join us if you will—at your own risk, of course—and enjoy along with us the waves of trivia, both critical and commendable, that wash our shore ... the notes and nonsense that prompts us to note that "the readers always write."

First out of the waterlogged mailbag is a telegram from a JFK of Washington, D. C., expressing congratulations on the "change of administration" of Driftwood. It's good to know we've got friends someplace.

Several letters from readers ask my opinion on a number of subjects ... mainly clubs. Clubs are all right in their places (as one disgruntled club member said to his club's president, "You're all right in your place, John. It just hasn't been dug yet.") But friend Bill Harrison of Chicago, a hearty free soul if ever there was one, says:

Hooray, Yippee, & Wahoo. Big Daddy Suh, I shout in protest against join, join, join, do, do, do, and go, go, go in diving. Suh, I am a non-joiner, non-doer, and never, never, never, a go, go, goer about anything. Please tell me what happened to all the crazy, good, lazy non-rush, non-join diving adventure Kiks that once emanated from free souls? Suh, I believe that 99 per cent of the good crazy Kiks have been lost in join, join, join commercialized diving. Also, do, do, do bring the wife on diving trips Kik. (Echhhh). Another: go, go, go diving in a crowd (mob) Kik, just tears me apart. Oh hear my tromped on cry to bring back the good old days of real unhampered joyous diving! On that thought I will sneak out the back door of the clubhouse into oblivion.

You'll probably sneak out alone, Bill, but don't discount club-chumminess altogether. You know you need a diving buddy. And when it comes to diving buddies, G. Holloway of Belmont, Massachusetts, has the right idea, to wit:

Realizing your interest in photography, a-hem, skin diving, et cetera, I take this opportunity to send along a snapshot of la femme taken on a Massachusetts shoreline some time ago. As you can note, our mermaid has just retired from a tiring dive in the "briny deep," this being a logical analysis of the situation! (Oh well, does she have to be able to swim also???) Keep up the fine work in Driftwood as I'm always interested in furthering my knowledge pertaining to skin diving and other matters mentioned in your writings!!! Why, just the other day I put aside an issue of Playboy to read your latest report. Well, so long for now as I must return to my lighter reading material. A-hem!

A-hem! yourself, G. And G. whiz, you'll ruin your eyes reading that other mag ... like G. minee' and G. pers, with "la femme" decorating Driftwood, and all. Another decorating pic that would have dressed up this column came from Milo Jurik of Lovington, New Mexico.



Greetings and salutations from the Land of Enchantment. Ha. I have no pictures of green-eyed blondes or beautiful wenches. Nor have I any insults against you, surfers, or such. Instead, I am sending you my prized possession, a pic made on a recent diving trip. We call it "Beer Bust at Ten Fathoms." (Hic).

Unfortunately, we had to retrieve this particular photo of an empty beer can lying on the bottom of a lake from the printers before it could be reproduced here. It seems they kept getting ideas every time they went to make an engraving of the photo, and by dint of inebriation they were never able to get the job done. Rather than have the magazine delayed, we had to get the photo back. Now we have another problem. We were showing the pic around to some of our buddies, and now Nick the Bartender has it stuck on the back bar mirror at his place. He wants to keep it there ... says it's good for business. And if ever I wanted to see somebody get the business—it's him. Now for some unfinished business:

I was very interested to read Carl Kohler's guesses about the identity of "Ben" who writes in our club magazine "Triton." I hope when he does find out who "Ben" is, he will let us know, because we of the British Sub-Aqua Club are just as puzzled as he is. I am extremely surprised that he should think it is Alan Broadhurst, because although Mr. Broadhurst is a prolific writer on diving matters, this just isn't his style. Alan Broadhurst is Chief Diving Officer of the British Sub-Aqua Club (the largest diving club in the world), Chairman of the Diving Committee of the World Federation of Underwater Activities (C.M.A.S.) and joint author of what is probably the best book on diving training and techniques ever written. That is the B.S.A.C. Diving Manual. No, I do not think he is "Ben." Nor do I think that "Ben" is a seventy-two year old Sussex spinster. We do not have such people diving actively in the B.S.A.C., but perhaps you do in the States?

Yours faithfully,  
Peter Duffy  
Leeds, Yorkshire, England

To my knowledge we do not have any seventy-two year old Sussex spinsters diving actively in this country. But let us hear from some of our clubs on this point before we rule out this possibility. Some clubs are forever promoting an underwater endurance record attempt, or trying to set a new depth record, and all that balderdash, so maybe a club in this country is trying to set a record of some kind with old ladies. Now that ugly word "club" has slipped out again, let's hear from Richard Haentze of Philadelphia:

This is to inform you that we have started a skin diving club here in Philadelphia. The name we have chosen for ourselves is the "Aqua Marines." We would appreciate it if you would check your files and see if there is any other club with that name. If the name "Aqua Marines" is still open we would appreciate it if you would file it as a club name and also publish it in your magazine so that other new divers will know that the name is taken.

Several points, Dick: (1) Among other things about clubs, I do not maintain a file on them, (2) it's a good bet that you prefaced "Marines" with "Aqua" instead of "U.S.," because I can tell you definitely that this name has already been chosen for one of the tougher clubs in the country, and (3) you're welcome.

## ARE CUDAS DANGEROUS?

Next to the shark, about anyone will tell you that the cuda is the most feared of the underwater predators. We are beginning to think that the "Great Cuda" is nothing but another Pisces that swims the ocean floor. We have been skin diving in and around Miami and the Keys for about four years now. We go skin diving three or four times a month. The first time we went skin diving we saw a cuda and it scared the hell out of us. We thought from what we had heard about cudas they would tear you up on sight. Since then we have learned differently. We have encountered numerous cudas, of all sizes, under many circumstances, and haven't once been touched by those "menaces." We've had them take fish right off our fish stringer and even our spears several times, but haven't once been attacked. That is why we think the cuda is overfeared. If you or any other skin diver disagrees or agrees with us, we will be glad to hear correspondence.

Wayne Bush  
Tom Davis  
Miami, Florida

One diver who will disagree with you immediately is "Lefty" Miller of Pomona, California, who up until three years ago was right-handed, who says the only thing more dangerous than the great cuda is the diver who is foolish enough to pooh-pooh the cuda. "Wear a stringer of fish tied from your waist, be stupid enough to flash a bright object at a cuda, and make a sudden turn ... the cuda will lunge in the murky water every time," says Lefty. "And the guy who doesn't believe the great cuda can be dangerous is just the guy to pull one of those stunts, too." Now let's hear from the rest of you readers on this subject.

A. W. Greer of Jackson, Mississippi, is the kind of guy who anticipates trouble, evidently. He starts out:



## ADVICE

To The Diver's Wife  
(by the wife of a diver)

Stay home and tend your pot of stew,  
He's diving deep today;  
He might not catch a whale,  
But he'll be hungry anyway.

Your share of diving comes, my dear,  
In rinsing off the diving gear,  
And listening agape as he  
Tells awesome stories of the sea.

Don't tag along and slow him down,  
Don't make the man stay back;  
He'll soon come trotting home to you  
And his nice clean cozy sack.\*

(\*That is, IF you keep it nice and clean and cozy!!)

Mrs. Fritz Hertlein

I won't say anything about you and your column because you'll have some smart remark . . . What I want to say is to the skin divers of Mississippi. Why don't you all form some clubs in more parts of the state than around the coast? I live in the middle of the state and if I want to go diving there is always the problem of trans-po. You really have to have a club to do anything. We have tried it but our club really fell apart. Please get together so we all may have somebody to dive with and really go some places together.

Now there's a voice crying in the wilderness! Why not start a club yourself in the midst of your trans-po problem? Only, I wouldn't call the club "Aqua Marines" . . . I think somebody a few paragraphs back has already copped the title. Besides, it sounds too much like a brand name for hand lotion.

And lastly, there is a typed note here from Richard Macirella of Plainview, New York that says he "reads your trash . . ." and is "peculiarly drawn to it. It must be something on the paper." The big question he wants answered: "Are YOU for real?" And the answer, Dick, is YES, in my own peculiarly drawn way.

And so this ends the "something on paper" in the mailbag for this month, except for the outrageously funny Conklin Report by Driftwood favorite R. C. Conklin of Venice, California, and some excellent advice from a diver's wife.

Just a reminder, though: Don't make an April Fool of yourself; Dive Safely . . . the wife you have may have to dive alone!

O'Keith, The Immoral Beard

## THE CONKLIN REPORT

Realizing that no diving group worth its salt is without a pet crusade, we of the "1/8ths" have delved into several of the present diving problems to seize upon one that we might call our own . . . to lobby against, write letters about, and in general provide an essence for our being, since we gave up diving in favor of meetings.

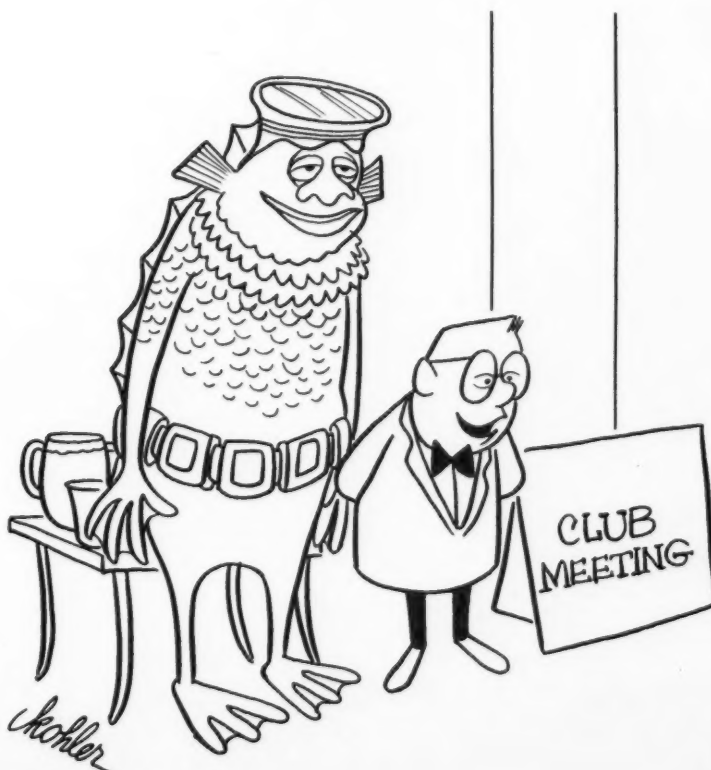
After lengthy investigations in the Los Angeles area, we find the improperly filtered air is a real health and morale factor to divers who fail to carry a copy of the SDM air stations list with them at all times. Not only is unfiltered air conducive to athletes foot in mice, the lumps, when permitted to enter the regulator cause a mass/density shift in the bubble structure resulting in the bubbles settling to the bottom rather than rising to the surface. This has caused several divers to attempt to dig their way to the surface.

In conjunction with improperly filtered air, the location of the compressor intake is also of prime importance. One diving shop, situated adjacent to a saloon, had the intake quite close to the exhaust fan from the grog shop. The resultant mixture, while fine for Saturday night parties, has resulted in two known cases of aircholism.

Another tale, sad to relate, concerns an unwitting diver whose tanks were filled by the gorgeous young wife of the proprietor. It seems that the GYW stood too near the intake and the tanks were filled with a mixture of her perfume and compressed air. This heady combination caused said diver to become romantically entangled with an unscrupulous seal, and only a firm stand by the poor fellow's wife kept him from scandal and heartbreak.

Our final sad saga, while not related to improper filtering, is also part of our new platform. A diver, whom we shall call Hymie O'Toole, rather than use his real name, bought a war surplus compressor in Africa from the Algerian rebels. As the instructions were printed in sanskrit, Hymie became confused, hooked his tank to the input and pumped in 2800 pounds of vacuum. When Hymie attempted to use this tank filled with an underabundance of nothing, he disappeared in two breaths. By weighing the tank and knowing approximately what Hymie had weighed and the weight of the empty tank, it was quite clear what fate had befallen poor Hymie. Somewhere in Los Angeles there is a diver's widow with naught to remind her of her dear departed, other than an old Algerian compressor and a chromeplated, engraved, 175 lb. lamp base.

"TONIGHT, WE'RE PRIVILEGED  
TO HEAR AN EXPERT WHO  
WILL SPEAK ON DEEP-  
WATER ACTIVITIES AND...."





## KEENE ENGINEERING DISCOVERS GOLD MINE IN SKIN DIVER MAGAZINE

**T**O KEEP UP with orders and meet the growing demand for good gold digging equipment, Keene Engineering Company has recently purchased a new



Ernie Keene in new plant displaying complete line of gold dredging equipment.

machine shop at 11483 Vanowen Street, North Hollywood, California. The building will soon be ready for production of more Keene Gold Suckers, acclaimed by many as the standard of light-weight gold dredging equipment in the United States. The new home of Keene Gold Suckers has an office area, assembly room, sheet metal department and dealer's display room. Company president Ernest Keene takes particular pleasure in showing prospective customers and old friends through the new plant. In order to get acquainted with the more and more people who are becoming interested in gold diving, Keene is planning an open house at the new plant on March 11, 1961. "Old and novice gold diggers will be welcome to come in for refreshments and a chat," says Mr. Keene. A gold machine will be awarded as a door prize at four p.m.

Keene's thriving gold dredging business is the outgrowth of a hobby, a lot of hard work and the right kind of advertising. "Skin Diver Magazine," says Keene, "is magic for letting the public know about your product."

The story of Keene Engineering

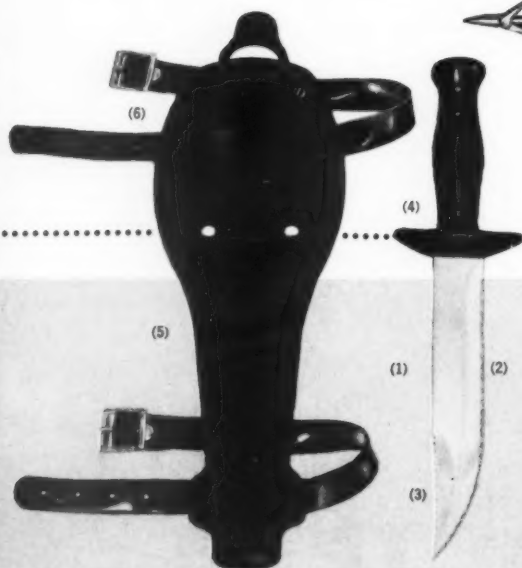
Company goes back several years when Ernie Keene sold a successful property management business to devote full time to his hobby of digging gold. A qualified mining engineer, Keene was convinced that the new type vacuum venturi process called the Mud Sucker was the only logical way to take gold. His work to perfect the suction dredge, invented by a San Diego aircraft engineer, was based on his earlier success at digging gold.

Keene prides himself on building good machinery. He has built many different versions of the venturi type suction dredge, each version for a particular job. These dredges run from two to 12 inches in diameter across the suction intake. Some of the larger ones actually bring all the gravel to the surface where it is fed over gravity sluice boxes and then back into the water. Keene claims his new patented underwater pressure sluice box is superior to anything previously on the market.

"But I'll be glad to tell the full story in person on Saturday, March 11th. We expect a real crowd when we open the doors on our open house," Keene smiles.

# choose

# you



**Newest and finest Spear Guns and Diver Knife**  
**Headline brilliant Sportsways New Product Parade**

### SPORTSWAYS DIVER KNIFE

Acclaimed The Finest, Most Versatile Knife Ever Developed For Diving

- (1) Blade is specially hardened stainless steel alloy.
- (2) Blade features full length cutting edge with
- (3) concave serrated area on opposite edge.
- (4) Guard and handle—jet black—one piece, shock resistant. Cyclocac molded for maximum comfort and safety.
- (5) Plastic leg sheath, specially designed, high quality, salt water-weather resistant, comfort contoured.
- (6) Strap to calf, or slip on weight belt.



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for 1961!**

**ALL NEW CUSTOM DESIGNED SPEAR  
GUN PRESENTED IN TWO MODELS**

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- ✓ Maximum Power
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# COUNTRY CLUB FOR DIVERS

By LOUIS R. DESPRES

APRIL 1961 will mark an innovation in the field of diving not only to the shores of Connecticut but to the world. This date will be the official opening of the only "Ocean Club" in the world designed especially for the skin diver.

Golfers have their country clubs, and hunters and fishermen their rod and gun clubs, but we divers had nothing. I say *had* for now skin divers will finally receive the recognition they deserve—as true sportsmen—as members of an "Ocean Club."

I truly hope that we will not be the only club of this type to open its doors to the diver. True we will be the first and original, but for the betterment of the sport and people connected with it, I truly hope and believe that other "Ocean Clubs" will

arise across our fifty states in the years to follow.

The "Ocean Club" will be located on the shores of New Haven, Connecticut, though we plan to have our membership extend into Central Connecticut, Long Island, and New York State, and estimate to have a maximum membership of around three to four hundred.

I have been asked what we shall offer and what we can offer to satisfy the skin diver. First of all, and we believe foremost, we will offer him sociability among the type of people he wishes to be with—other divers and those who have a love of the sea.

Normal country club activities will prevail throughout our premises such as dancing, cocktail lounge, bar room facilities, and a game room with its ping pong, pool table and card table. An underwater library will be available to those who wish to further their knowledge of the world of inner-space with books, magazines, and articles pertaining to the sport.

For our non-diving family members we will provide private swimming facilities and women's and children's activities such as bridge parties, tea's, children's dances and movie days.

The "Ocean Club" is actually a financial savings for our members for we offer two things in hope of saving the diver a few

dollars. A year around free air supply is one and a low cost charter boat service the other. Compute the amount of money you spend each year on air—quite a bit. And how much money do you spend each time you go out on a day's dive, driving back and forth, eating on the way—for what, just a few hours in the water. Our boats will board our members early in the morning, dive all day in clear waters, and return them to the club early the same evening. The price? We hope it to be around \$5.00 per individual.

It has been said by some that the "Ocean Club" will break up those smaller clubs already established. I disagree with this and add the following as food for thought. We will provide a free meeting place for any diving club and hope to initiate interclub competition with treasure hunts, spearfishing meets, and starfish derbies. We believe that we shall actually bring these clubs closer together rather than break them apart.

Yes, fellow divers, it has finally arrived, a country club for the skin diver—an "Ocean Club."

Further information concerning membership to the "Ocean Club" may be obtained by writing or phoning, "Ocean Club," 8 Cove Street, New Haven, Connecticut, or Mr. Louis R. Despres, 130 Bradley Ave., Meriden, Conn.

## ur weapons!

1635 "COMPETITOR" SPEAR GUN with Stainless Steel Two Barb Spearhead .....27.50  
Length is 55½ inches tip to tip

1636 "SPORTSMAN" SPEAR GUN with Stainless Steel Single Barb Spearhead .....19.95  
Length is 39½ inches tip to tip

### UNEQUALLED PERFORMANCE ASSURED from New Construction Features

- (1) New "O" Ring Seals in Barrel
- (2) New Balanced Trigger Mechanism
- (3) New Cocking Stock
- (4) New Automatic "Spin-Off" Line Release
- (5) New Stainless Steel Shaft Design
- (6) New Advanced Muzzle Design

### NEVER BEFORE HAVE SO MANY NEW FEATURES BEEN INCORPORATED IN A SPEAR GUN DESIGN.

All divers are urged to examine these great new guns in person at their favorite skin diving shop. Dealer Inquiries Invited



Most Advanced Diving Equipment"



## NAUI INSTRUCTOR IN THE NEWS...

Monday evening, January 2, 1961. Three Milwaukee girls and three male companions were joy riding on the ice of Little Muskego Lake, Waukesha County, Wisconsin, in a customized 1949 convertible. An upheaval of expanding ice which rose a foot to two feet high served as a jump. The car rose in the air and came down on an area which had just recently frozen. The ice was only three inches thick and then the car lights were gone.

The time was 6:30 p.m., total darkness. The three male youths appeared at the surface within a few minutes and were pulled to safety by nearby ice fishermen. They were taken to a home ¼ mile away, stripped of their frozen clothing and rushed by police ambulance to the hospital where they were treated for severe shock and exposure. It was 15 degrees with a 15 to 20 mile an hour wind. There was no sign of the three girls.

The Waukesha County Sheriff's Dept. placed hurried calls to Brookfield Skin Diving Supply & School,

Inc., which I own and operate and to our private home. I have been there on-call diver for several years. When I arrived at the scene of the accident a short time later there were hundreds of police officers, sheriff's deputies and firemen willing to give me all the assistance I needed. A large steel ladder was placed over and beyond the huge hole. Planks were placed on top for a walk. Portable generators flooded the area with lights. A safety line was attached around the waist of my wife, Patricia, who also dives and is completely familiar with line signals. In her hands she carried my life line which was attached to my arm. As she stepped to the ladder firemen held firmly to her life line and to the end of mine. She directed operations from the center of the ladder.

Muskego Fire Chief Louis Ludwig helped me out to the edge of the ice as he walked out on the ladder to join Pat. Complete quiet descended on the crowd as I entered the icy water for a first exploration dive. Reports had

been received that this area was 80 feet deep. The convertible was upside down, on its top, lying on a silt covered sandbar, 20 feet down. I saw the arm of one of the victims among the twisted wreckage in the back seat.

I surfaced for a second line which I attached to the girl's wrist and brought her out the back door and signaled to pull her to the surface. A few minutes later I was again at the bottom holding the second line and searching the car for the other two victims. The second body was also discovered in the back seat among the twisted wreckage. In order to remove her body I had to cut out the rear window. Twenty minutes later I attached the line and the second girl was brought to the surface.

Two purses and a pair of ice skates were brought to the surface as I continued my search for the third victim. I could not find the body inside the car. I then attempted to open the trunk by first using the keys from the ignition, but the lock was gone and no opening mechanism could be found. A

*(Continued on Page 64)*

# TRAGIC JOY RIDE

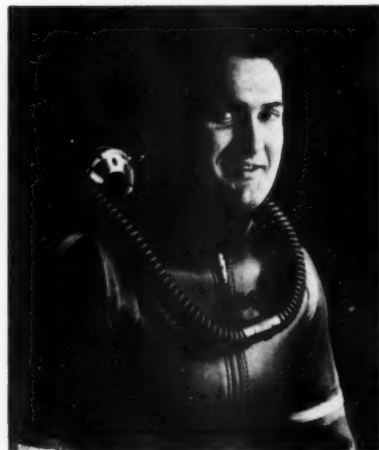
By R. P. JACOBS

NAUI Instructor #38

View of area from an airplane. Hole in center is where auto plunged through, other holes were cut at request of Jacobs to aid in search pattern.



Russell P. Jacobs, author of article and NAUI Instructor, was the diver who probed the icy water for victims.





# OCEANOGRAPHY

By ROSS R. OLNEY

[ Second of a series on the importance  
of oceanography in the next ten years. ]

## Basic Research

HOW MANY fish are in the sea? An old question, heard countless times and usually in jest. Now, however, it becomes necessary to find an answer to this question along with many others equally difficult. For example, how many plants and animals live and die in the sea, how do they multiply, what effect has the sun on them and how did this touch man's life? Why are parts of the ocean rich and abundant in life and other parts barren?

In the oceans of the world lie the key to man's future, and the principal reason why he must study them. The other reason . . . simply, they are there and not understood and man has always been fascinated by the unknown.

Food from the ocean is the main source of animal protein for a large portion of the world's population . . . a population which is increasing day by day. The harvest, then, must be increased. Because the oceans are mysterious we will study them, because they are the key to man's future, we must. But only by answering the previous questions can we begin to increase the productivity of this area which covers 71% of our world.

There are specific fields of basic oceanographic research, the first of which is a study of the history of the oceans themselves. The age of the earth is tied closely to the age of the universe, as the history of the earth is tied to the history of the universe. Much of this history rests concealed on the ocean floor, buried under 300 million cubic miles of water and tons of sediment. But by penetrating this massive barrier, we will learn not only secrets of the ocean, but secrets of life itself and of the space that surrounds us.

Until recently, the barrier was almost impossible to overcome. However, with the inventions of new instruments and techniques by marine scientists the wall is beginning to crumble. New techniques in underwater photography, echo sounders, precision navigation, coring tubes, acoustical probes for a study of bottom sediments, and seismic, magnetic, gravity and heat flow methods for a study of the structure of the earth's crust . . . each tells us more.

It has become possible, with the discovery of fossiliferous sediments laid down as much as 100 million years ago and still exposed, to combine the classical methods of the stratigrapher with modern geochemical methods to construct a geological map of the deep-sea floor which reveals the later history of the ocean basins.

And further, to possibly answer questions on the history of the oceans which have plagued scientists. Questions such as the mechanisms of transportation and dispersion of sediment across the shelves and in the abyss . . . the finding of fossils of the *Tertiary* or *Cretaceous* age, but none older . . . the sudden increase in radium content at an age level of 200,000 years. What slow-rate chemical reactions are taking place? What is the history of the deep, narrow, almost sediment-free trenches that ring the Pacific basin?

Faults around the margins of the Pacific Basin suggest a counter-clockwise rotation. Does submarine topography support this hypothesis? Are fracture zones the spokes of the wheel?

What is the history of sea water and how much water was present at different times in the past? These and many, many other other questions pertinent to the productivity of the oceans can be answered by studying the history book of the sea . . . the sediments under the sea floor.

Another field to be studied is the ways of life in the sea. The naturalist had the original approach; discover and describe marine organisms and classify the ecological structure of the communities they form. And this is still a major phase of marine biology, but side by side with the marine systematist and ecologist we now have geneticists, biochemists, bacteriologists, cell physiologists, evolutionists and students of behaviour, each using marine organisms for his own special field.

The naturalist had the original approach; discover and defishes at great depth are so small, or if there are gigantic ones yet undiscovered. The evolutionist, specifically, narrows his general biology studies to particular questions. Why do arrow worms, forming a wholly distinct phylum, produce only a few dozen species while the snapping shrimps produce genera with 150 (*Synalpheus*) and 215 (*Alpheus*) species? Under what conditions do recent discoveries of extremely important organisms such as *Latimeria*, *Hutchinsoniella*, and . . . oldest of all . . . *Neopilina*, survive?

Each scientist, in his own field, will answer questions on the ways of life of the sea, as they discovered the radical change of temperature of the depths in the post-Miocene times by a study of the oxygen isotope ratios in shells of bottom living organisms.

The motions of the waters must be understood. Until recently, only the movement of water near the surface was comprehended but within the last few years an effective attempt has been made to gain knowledge about the motions of water at great depth. This was done principally through a theoretical analysis of the thermodynamics and hydrodynamics of the oceans, the use of radioactive substances that occur naturally in the ocean such as radio-carbon, radium and tritium, and other new techniques recently discovered. Actual, scale model experiments are even conducted to test new thermodynamic theories.

The results? Recently we learned of the existence of a narrow, southward flowing current at depths of several hundred meters beneath the Gulf Stream. It moves at about 1/3 mile per hour and transports some 15,000,000 tons of water a second, five hundred times as much as the Mississippi. Discoveries such as this change our previous

(Continued on Page 56)



# Personality Spotlight

BY CONNIE JOHNSON



(William M. Stephens Photo)

## DR. EUGENIE CLARK

**T**HE bell rang as the hungry lemon shark cruised around the confined area of its pen at Cape Haze Marine Laboratory. Now the monster could eat and it rushed to the waiting bait and gulped it down.

The lemon shark dispelled a long believed theory that it and other members of the ocean's feared predator were not smart enough to perform a sequence of acts.

Dr. Eugenie Clark, director of the Florida laboratory, has spent months proving that sharks could be trained. Every morning the petite woman headed for the shark pens, notebook in hand, to record the successful attempts of the sharks. A target carrying device was lowered into the water and almost immediately one of the sharks in the corral would break away from the circle and push the target with its nose causing a bell to ring. At the sound of the bell the shark would wheel around and swim directly to the spot where the bait had been lowered. Another successful hit was recorded in the lady ichthyologist's notebook.

The training of sharks is only one of many outstanding accomplishments by this diver-ichthyologist.

Her career in ichthyology had its beginnings when she was only nine years old and regularly visited Manhattan's old aquarium. Her enthusiasm in the fish life prompted her mother to give her a fifteen gallon aquarium for her birthday. The aquarium lead to collecting any and all species of fish, reptiles, etc. Biology was her favorite high school course because she learned about plants and animals helping her better understand her houseful of pets. No matter what her English class was told to write about she always managed to bring fish into the story somehow.

At college she majored in zoology as she wanted to become a professional zoologist, preferably an ichthyologist. After graduating from Hunter College, she took her MA at New York University, then went on to specialize in ichthyology and oceanography at the University of Michigan Biological Station, at Scripps Institute of Oceanography of the University of California, at the Woods Hole Marine Biological Laboratory and at the Lerner Marine Laboratory in the West Indies, completing her work for her Ph.D. at New York University in 1951.

She has had three science fellowships, from the Pacific Science Board in 1949 to study poisonous fish in Micronesia, from the Atomic Energy Commission to study reproductive behavior and physiology of fishes in 1950 and as a Fulbright Research Scholar in Egypt to study the fishes of the Red Sea.

Dr. Clark in addition to her scientific writing is the author of several articles appearing in *Natural History Magazine* and her first book length work, "Lady With a Spear" published by Harper and Brothers.

A lover of the water from infancy (her mother started taking her to the beach before she was two years old) she began diving while in La Jolla, California. When she left New York for La Jolla and a job as part time research assistant to Dr. Carl Hubbs and also to start working toward a Ph.D. degree at the University of California she tried her first mask swimming underwater among the rocky reefs just north of the institute. Her comment, it was just like looking into an ocean sized aquarium.

That first dive sent her shooting to the surface when she spotted a moray eel, but she soon learned the fundamental facts about most of the so-called dangerous fish and believes to this day that the careful skin diver is safer than the average person encountering the hazards of daily life.

While with Dr. Hubbs she made her first dive with a helmet. The institute's research vessel took Hubbs, four Scripps students, a Navy diver and Eugenie to explore the kelp beds. Eugenie got a chance to use the helmet and after hitting the sea floor walked in amazement at the life underwater. She meandered some distance from the boat when she began having difficulty getting air. She got back beneath the boat and passed out. The helmet began filling with water. The shock of the cold water revived her enough to discard the contraption and start for the surface. After a short rest and the repair of the helmet (the air line had become loose and shut off her air) she went down again.

In 1947 the U. S. Fish and Wildlife Service in planning to survey the fisheries possibilities around the Philippine Islands hired Eugenie as scientist on the project. However, several persons were surprised that a girl had been hired for the job. She

(Continued on Page 61)



# WINDANSEA MEET

WHEN rough, dirty water invades the coast of Southern California, divers look for a "santana condition" to alleviate the situation. The warm desert air calms the surf down and blows the dirty water out to sea, leaving only clear water close to shore. The shallow water is then perfect for diving and underwater photography.

Such were the conditions for a unique spearfishing contest sponsored by the Addicts of San Diego recently. The strong santana winds which had blown two days earlier left the ocean calm and clear and the day was warm and beautiful. This was an open meet in which only pole-spears could be used, with trophies and prizes being awarded for the various categories.

The majority of divers in the meet were from the local area, with the exception of a few who traveled from Santa Barbara. The meet was held off South Windansea Beach where, within a half-mile radius, there are luscious kelp beds, sandy bottom areas and large reefs to stimulate the heart of any diver.

Forty-three divers entered the

By **VERNE FLEET**

(Photos by Ron Church)

water to compete for eleven trophies, two of which were spearguns hand made by members of the Addicts. Even with perfect water conditions, fish were not too plentiful, for they hadn't moved back into shallow water after the high winds. This factor increased the test of skill for the individual diver.



Pole spears, the only weapon used at the Windansea Meet, stand waiting in the sand.

In spite of this, there were several impressive catches recorded when the final tally was taken and the competition was very close. Jerry Bastian of Santa Barbara walked away with top honors with 88 points for the largest total aggregate, winning the small Addict gun. Second, was Ron Merker of the Newport Submariners with 52 points and third went to Jerry's teammate, Pete Norworth, with 40 points.

The second hand made Bottom Scratcher-type gun went to Dave Chambers of the Mantas of San Diego for the largest edible fish, a cabazon worth 24 points. Don Rolstead of the Kelp Kings of San Diego took the largest game fish trophy with a Calico Bass worth 22 points.

In the Junior Division, the Jr. Addicts of San Diego took all the honors. The largest non-edible trophy went to George Payne of the Mantas with a 136 point Bat Ray. Marge Wilkinson, the only woman competing in the Women's Division, put many of the men to shame, turning in a catch worth 28 points.

Nan Limbaugh, wife of the late Connie Limbaugh, presented the trophies.



Dave Chambers holds aloft the largest edible fish taken, a cabazon. Note bent line on spear.

Nan Limbaugh, wife of Connie, presents the first prize hand-made Addict Gun to Jerry Bastian.





# News Current

NEWS FROM AROUND THE GLOBE COMPILED AND EDITED IN SKIN DIVER OFFICES. Local diving news from readers welcomed.

**NORFOLK, VIRGINIA**—Teams of Norfolk police divers launched an intensive search for a .22 caliber pistol on the bottom of the Elizabeth River. The pistol being sought is believed to have been used in a robbery and shooting.

**PORT HURON, MICHIGAN**—Discovery of a horde of coins at the bottom of the St. Clair River at the foot of the Grand River avenue was stumbled upon by diver Dean Presley. The diver returned with members of his club, the Port Huron Channel Cats, and recovered half dollars, Indian head pennies, nickles and dimes with a face value of \$400. They plan to dig deeper into the bottom mud hoping to find older and rarer coins.

**WOODS HOLE, MASSACHUSETTS**—The mystery of where bluefin tuna disappear to in the winter has been solved. Scientists have made spectacular tuna catches east of New York City about 100 miles offshore where ocean depths abruptly drop to several thousand feet. Bluefin tuna regularly appear in coastal and shelf water during late spring and early fall but disappear for a short time in winter. The scientists from Woods Hole located the fish schooling for their winter migration in the deeper waters off the continental shelf.

**PYRAMID LAKE, NEVADA**—Dave Dodson and Jeff Islands were diving in Pyramid Lake when an underwater rock slide occurred. Islands was not seriously hurt, but Dodson received internal injuries which proved fatal.

**KEY WEST, FLORIDA**—Diving students attending the University of Florida have been accompanying Dr. H. K. Brooks, paleontologist at the university, in exploring offshore reef formations at Key West.

**SANDY HOOK, NEW JERSEY**—Divers and state and federal marine biologists met recently to discuss the nation wide marine game fish survey to be conducted by the Atlantic Marine Laboratory at Sandy Hook. Sponsored by the U. S. Department of the Interior the massive survey of the population, environmental influences and life cycles of marine game fish is the first step in a multi-million dollar program to investigate all aspects of the marine sport fishing industry. Divers will be gathering information on various species, numbers and movement of fish.

**INDIANAPOLIS, INDIANA**—Twenty-seven members of the state police force in Indiana are newly trained as an underwater recovery unit.

**GREAT FALLS, MONTANA**—James Johnsrud and Donald O'Bray made a survey of the Missouri River bottom below Morony Dam where a pipeline will eventually cross the river floor. The divers made the survey in 40 degree water.

**EUGENE, OREGON**—Divers assisted in the recovery of a family of seven that met their death in Dexter Reservoir when their car plunged through a guardrail into the water. Divers were Mo McAdams and deputy sheriff James Douglas.

**HONOLULU, HAWAII**—The State Fish and Game research vessel Makua is making regular trips to Maunalua Bay offshore of Waialae with a cargo of junked autos. The department is following other successful artificial reef construction done off California and the east coast.

**ROCKFORD, ILLINOIS**—Three skin divers, sworn in as special deputy sheriffs, began searching the bottom of Windsor Lake for a stolen 1953 auto.

**BOSTON, MASSACHUSETTS**—Following in the wake of the tragic airliner crash in Boston Harbor early this winter the Boston Fire Department has organized an underwater rescue team. Another near accident at Logan Airport underscores the need of the diving rescue group which will be on call for all accidents involving the water.

**SANTA ROSA, CALIFORNIA**—The annual starfish mop of the East Bay Barnacles stirred a flurry of controversy. The mops are welcomed by all the area fishermen who lose valuable fish crops each year to the invading starfish. However, the starfish had a protector in Dr. Cadet Hand of the University of California Department of Zoology. He fears cracking down hard on one kind of sea creature may have unexpected, far reaching and harmful effects.

**WILLISTON PARK, NEW YORK**—Dr. J. A. McLaughlin who has been awarded a government grant to discover what makes Puerto Rico's famous Phosphorescent Bay light up, left for two weeks of research in which he hopes to isolate the micro-organism responsible for giving the bay its luminous glow. The professor hopes to discover the problem of pollution in Long Island waters through his research.

**UTICA, NEW YORK**—Gaylord Jones plans to search for the sunken remains of a British frigate from the War of 1812. Jones plans the search this spring and hopes to recover the ship's cannon to add to his collection of historic military relics.

**EVANSVILLE, INDIANA**—Dr. J. D. Wassersug put his diving hobby to work in recovering a chemical company worker from the bottom of an old empty acetic acid tank. The doctor was called to treat the victim when he was recovered from the tank but when he arrived three men were lying unconscious on the floor of the 15 foot high tank. The doctor and a fireman donned diving equipment and recovered all three men from the tank.

**PLUM POINT, MARYLAND**—The Cliffs of Calvert, a boneyard for prehistoric mammals, is now being invaded below the water line by divers Joe Dorsey, Wade Clark and Bob Langley. The Cliffs have long been a hunting ground for fossil collectors and the divers have turned up some rare finds in the waters off the cliffs.

**RICHMONDVILLE, MICHIGAN**—Divers and a commercial fisherman have discovered a large three masted schooner in Lake Huron in 80 feet of water four miles off Richmondville. The fisherman tangled a net on the ship and passed the word on to Trooper Garth Meyers, a state police skin diver. Meyers and Frank Ryder explored the site and discovered the 170 foot sailing freighter carrying coal lying upright with its masks snapped off. The ship is not shown on navigation charts of the area. The only identification on the mystery ship is the name of a Boston manufacturer on the gearbox. Historians have estimated the age over one hundred years.



**STOCKHOLM, SWEDEN**—One of the newest and undoubtedly most unusual divers probing the depths off Stockholm (and any other port) is **Lavvan**—a two-year-old fox terrier. **Sven Nahlin's** faithful pooch would follow him every day to the beach, into and even under the water. However, **Lavvan** was getting water in her ears and wasn't able to stay down any length of time. So **Nahlin**, an instructor in a Stockholm diving school, and his brother constructed a special diving gear for the dog. **Lavvan** when dressed for diving is complete with hood, mask, tank, double hose regulator and suit. The unusual dog can now spend 20 minutes underwater, but her master restricts her dives to 10 minutes. He adds that she is an extremely fast underwater swimmer, moving much faster than he does.

**PATERSON, NEW JERSEY**—A trio of divers of the **Paterson Civil Defense** were called by the **State Highway Department** to locate one of two acetylene tanks which dropped into the **Fort Lee Meadows**. The chemicals in the tanks threatened to foul up the **Bergen-Passaic Expressway** construction program pumping system set up in the 15 foot waterway.

**TORONTO, ONTARIO, CANADA**—**Reginal Winstall** plans an under ice search of an old pit that once yielded gold ore worth \$10,000 to \$15,000 a ton. The pit has since become submerged, but **Consolidated Golden Arrow Mines** is re-exploring the area and plan to drill through the two foot thick ice if the diver is successful. **Winstall** will be searching in **Dogpaw Lake** near **Kenora** in air temperatures of 40 below zero.

**COLOMA, CALIFORNIA**—A program including skin diving for gold was held to commemorate the discover of gold at **Sutter's Mill** 113 years ago. The ceremonies were held to dedicate the **James W. Marshall Gold Discovery State Park** at **Coloma**.

**ASHTON, RHODE ISLAND** — Divers searched the muddy depths of the ice-clogged **Blackstone River** for 15 stolen bars of platinum worth more than \$150,000. The almost pure platinum bars, which weighed between 120 and 150 pounds, were taken from the **Owens-Corning Fiberglass Corp.** plant on the banks of the **Blackstone**.

**LAKE GEORGE, NEW YORK**—A crew of five divers working with closed circuit television have begun to probe the frigid waters of **Lake George** in an effort to chart the remains of a mystery fleet of ships which may have sunk more than 200 years ago. The wooden ships are believed to have been used in the **French and Indian or Revolutionary Wars**. During the project, television views relayed back to the surface by the divers will make it easy for archaeologists on the lake's surface to direct the divers below. Divers making preliminary observations report that the vessels are weighted down with large stones and appear to have been deliberately sunk.

**CASTRO VALLEY, CALIFORNIA**—**Bill Gault**, a member of the **Alameda County Sheriff's Underwater Rescue Team**, believes he has an effective shark repellent and intends to test it. With a knowledge of electronics and a recording of porpoise noises he put together a transistorized gadget that will make both a low toned staccato beep and a high pitched on and off whistle. He has tested the device in **Monterey bay** waters and found that it works, the fish swarmed in schools toward him when he turned on the low pitch tone, but took off at high speed when the high pitched tone was turned on. **Gault** intends to test the device this spring in **Mexican** waters even though scientists have told him that the use of the porpoise noise could be dangerous to a diver in that he might be attacked by other aroused porpoise.

**BROWNSVILLE, TEXAS**—The **Brownsville Border Patrol** now operates a scuba team to help victims of maritime disasters, recover evidence, underwater search and rescue. **Jim Morrell** and **Dick Woolsey**, the patrol divers, will be available to law enforcement agencies in the area.

**EGLIN AIR FORCE BASE, FLORIDA**—Ten members of the **48th Air Rescue Squadron (MATS)** are learning the parascuba technique. The men are being shown how to jump from airplanes equipped with both parachute and scuba equipment for rescue or recovery from the Gulf floor.

**PRAGUE**—A picturesque lake in **Czechoslovakia's Tatra Mountains** may be lined with plastic to prevent it from drying up each summer.

**TOKYO, JAPAN**—A new Japanese scientific publication will soon list ten hitherto unknown varieties of hermit crab. They were discovered by **Emperor Hirohito** whose hobby is marine biology. The specimens were collected in **Sagami Bay**.

**LONG ISLAND CITY, NEW YORK**—**Leroy Kieser's** hobby of diving and knowledge of mouth-to-mouth resuscitation saved the life of one of his fellow worker's. An **Idlewild Airport** mechanic was looking for a leak in a gasoline tank in the left wing of a **Constellation** undergoing a routine check at the **TWA** hangar when his mask somehow slipped and he became overcome by gas fumes. **Kieser** arrived at the scene and with two other men crawled to the victim who was inside a small compartment inside the wing. **Kieser** immediately began applying artificial respiration via mouth-to-mouth because of the cramped quarters. By the time the victim was brought around and removed from the wing, two of the rescuers were overcome and all three had to be taken to the hospital.

**NEWPORT BEACH, CALIFORNIA**—**Marine Cpl. Thomas Fuller** while searching for a drowning victim discovered the wreckage of a **World War II** torpedo bomber in 90 feet of water about three-quarters of a mile from shore between **Newport** and **Laguna Beach**.

**NORTH QUEENSLAND, AUSTRALIA**—A wreck found off the **North Queensland** coast in December may be that of a **Royal Navy** ship which sank in 1791 while carrying the mutineers from the notorious **HMS Bounty**. The wreck was discovered by a **Sydney** yachman while cruising in the **Barrier Reef** area. A bell inscribed with the date 1711 was discovered when the yacht's owner dived overboard to free a snagged anchor and discovered the wreck. An expedition is being planned to explore the vessel and learn its identity.

**DETROIT, MICHIGAN**—A watergoing ambulance based behind **Wyandotte General Hospital** is a new kind of medical service to make seafaring safer in the **Detroit** area. The 31 foot express cruiser was outfitted with portable resuscitator, splints, first aid equipment, diving gear, etc. and went into first season last year. The water ambulance is operated by the **Superior Ambulance Co.** and was put into operation when it was realized that slow tugs were bringing heart attack victims and other emergency cases to a waiting ambulance on land.

**GREENSBURG, PENNSYLVANIA**—The **Keystone Skin Divers Association** helped clear **Roadman's Lake** of lily pads and other surface debris to help prepare the large pond for winter ice skating. The divers were **Frank Santavy, Frank Gretchen, Bill Silk, Gerry Schweitzer** and **Wallace Mundell**.

**MONTREAL, QUEBEC, CANADA**—Divers **Ian Worth** and **Maurice Boutin** have discovered a 250 pound anchor that may have come from a **British** man-o-war sunk during one of the many colonial battles near **Fort Lennox** on the **Richelieu River**. Pieces of the anchor and chain were sent for metallurgy tests and carbon dating.

**COEUR D'ALENE, IDAHO**—**Robert Stillman** and **William Graham** have been salvaging 9,000 to 12,000 board feet of submerged logs from the **St. Joe River**. The two divers sell the logs to a lumber company.

**PHILADELPHIA, PENNSYLVANIA** — The **Underwater Explorers Club** received a citation from the **Philadelphia Park Commission** for its donation over the past year to the **Philadelphia Aquarium** of numerous live marine specimens including three sand sharks.

**PANAMA CITY, FLORIDA**—Members of the **Tyndall** and **Eglin Air Force Base** skin divers played fish finders for fishermen aboard the party boat **Redfin**. With the aid of the divers the fishermen netted a whopping catch of a thousand pounds of snapper and grouper.





Author Ken Marx proves he knows what he's talking about as he displays huge lobster he just captured. Photo by Dick Spencer.

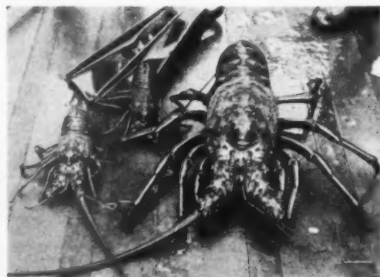


Jim Sawtelle underwater at Point Fermin with freshly caught California spiny lobster. Note horns. Photo by Dick Anderson.

# LOBSTER

## HOW TO FIND THEM, CATCH THEM, COOK THEM AND EAT THEM

California spiny lobsters side by side with flipper for size comparison. Photo by Dick Spencer.



Don Bishop holds east coast clawed lobster next to 5 year old Vaughn Cabral.



Jim Sawtelle grabs lobster around back as it clambers up rock at Pt. Fermin. Photo by Dick Anderson.







nia

s it  
Dick







By

KENNETH P. MARX

**I**N SOUTHERN CALIFORNIA we are close to an abundant supply of lobster. Not more than one-hundred-twenty miles away, in Lower California, lies vast stretches of uncharted reefs, loaded with big "bugs" just waiting to be taken.

Why haven't they been taken before this? The reason is simple, most of the coast line in Lower Mexico is inaccessible to divers. But there are places where boats, motors, and guides can be obtained at reasonable expense.

Let's just take an imaginary trip and see how it's worked out from start to finish.

First of all, there are a couple of things you need to know about the *Panulirus Interruptus*, which is what our Southern California lobster is called. The seasons are the same in the U. S. and Mexico and the size limits are the same, three and one-fourth inches measured from a point between the eyes to the first body segment. Only ten lobsters can be brought across the border per person, and it doesn't matter how many days you stayed in Mexico, you're still allowed only ten.

The alarm rings at 2:00 a.m. so you pull yourself out of bed. After a quick breakfast you go to the garage to check your diving equipment once more. You should have tank, regulator, a good pair of leather gloves, wet suit, weight belt, a couple of gunny sacks, mask, fins and snorkel.

About 7:00 a.m. you and your buddy have arrived at your destination in Mexico. Next is the dickering with the guide as to the price, usually around \$3.00 dollars each. Each guide has his own location that he will take you to. And it will be fairly productive, but if you want to do a little exploring you might find a few reefs that have never been dived on, mark them and you have your own lobster gold mine.

When you're on the bottom, at the base of the reef, the first thing you look for are holes, crevices, and caves, the places where lobster likes to hide. The main thing you look for are the antennae, which will be exposed. On occasion the head region may project but this is seldom.

Lobsters tend to aggregate so if one is found in the area there will be more, but the aggregations may be broken up

in their search for shelter. In large "holes" you may find up to six or eight large "bugs."

In diving a buddy system is necessary, and one we use works quite well. Briefly it's this; one man catches the bugs while the other follows with the sack, ready to hold it open when a lobster is caught, then they reverse the procedure and the other fellow catches a few. If the one holding the sack spies a bug he shows the lead man where it is and the lead man catches it. In this way the buddies will not become separated.

The way to catch a lobster is to slip up quietly, your hands ready to grab the lobster. The second you are within range, grab the bug at the base of the antennae, or the "horns."

If you grab the antennae above the horns the lobster will snap it off just below the point you hold. Once you have a good hold on the horns you still haven't got him out. The lobster will straighten his legs and force his back against the top of the hole. In this case you must rock the bug back and forth until he is free of his hole.

Always look a hole over carefully before reaching in and pulling a lobster out, as lobsters and moray eels are, many times, seen together and what you reach for in a hole might have been a bug, but what you pull out might be something altogether different.

Now for a few facts about our *Panulirus Interruptus*. Its point of origin is around the middle of Baja California. From there it migrates south to about Magdalena Bay in Lower California, where it overlaps that of another species. These two species do not hybridize and are easily distinguished from one another. Our spiny lobster also ranges as far north as Monterey, California, and can attain a weight of thirty pounds. When a legal lobster is caught he is about four years old, and it's been estimated that they can reach an age of eighteen years or more.

The lobster's highest mortality rate is not due to fishing or predator pressure as one might think, but due to molting. As the lobster grows his shell will split down the middle and he must crawl out of it. If the lobster cannot get free of his old shell, he will die. Many of these lobsters are seen dead every season, lying on the bottom as if nothing has happened to them, but if you look carefully you will see where the shell has started to split.

Now we will assume that we have our limit and we are preparing to take them home. Make sure that the sack is wet and that no heavy objects are

on top of your lobsters as this will kill them.

One question I am asked quite often is, "How long, after they are dead, can you eat them?" The answer to that depends on the condition of your lobsters, when they were caught, and the amount of heat during the day they have been subjected to before cooking. If the heat is not too severe, and they are cooked within twenty-four hours, even though dead, they will be safe to eat. If you are in doubt a good rule of thumb to test a lobster is, after cooking it, straighten the tail out and let it snap back. If the tail does not snap back to its original position the lobster is doubtful and should be discarded.

Always bring back the whole lobster. If you are stopped by the authorities with just the tail in your possession there is no way to determine if it's legal and you may be cited.

In cooking lobster, a prime pre-requisite is a pot that will hold about five gallons of boiling salt water. Drop the lobsters in while still alive and boil them for twenty minutes to a half hour. After they have turned a bright red they are done. Now break off the legs, disjoint the tail from the body, and break off the horns as this has the sweetest meat. All these parts can be wrapped and frozen.

Now for the best part, how to prepare and eat them. Take the tail and straighten it out. With a sharp knife pierce the middle of the shell and cut toward the tail. Make sure that you cut completely through the ribs on the underside of the shell. When the tail is cut in half you will find a sand line running down the center, this can easily be removed.

Dot each half shell liberally with butter, then put them in the broiler for ten to fifteen minutes under a moderate heat. You may serve them on the half shell or the meat may be taken out. Broiled lobster with a dish of melted lemon butter to dip them in, garlic bread, string beans and macaroni salad is a hard dinner to pass up. As for the horns and legs, they can be put out in a bowl of crushed ice with an onion soup dip in the middle and a couple of nut crackers on the side. Everyone then helps themselves. This makes a delicious appetizer.

These are a few of the tips on how to find them, catch them, and prepare them. I hope, for those people who have a hard time getting lobster, that this article will be of help. And to those who are going after lobster for the first time, may this article lead you down the road to happy lobstering. ➤





# Junior . . .

# FIN FANS

by JEAN DOWD

(Would you like a diving Pen Pal? Send in your name, age and address and we'll print it in the Junior Fin Fans column. Write to: Junior Fin Fans Underwater Mailbox, c/o Skin Diver Magazine, Lynwood, California.)

"HALLO, unge froskemenn!" (Hello, junior skin divers.) Come join us in the Land of the Vikings and the Midnight Sun. Enjoy with us the surprisingly warm and clear diving water in the majestic fjords of Norway. The fjords are like fingers of the ocean thrusting their way into the wild, rugged mountains. Some of these fjords are 500 yards across while the mountains on both sides are more than 3000 feet high. Great herds of reindeer roam the forests of spruce, fir and pine. Yet in the midst of this overwhelming scenery, you'll find quiet villages nestled in calm inviting bays.

To the north lies Norway's "Land of the Midnight Sun" where you can enjoy sunlit nights throughout the summer months. The fjords and the Mid-

night Sun are two of the seven wonders of the world.

Sixteen year old Halfdan Kierulf is an experienced diver from Oslo, Norway. He spends much of his leisure time diving with his 12 year old sister, Evelyn, and his brother Aksel, who is 10. They learned to dive from their father and Marius Eriksen. Marius is the elder brother of Stein Eriksen, the world and Olympic slalom-ski champion. Marius and Halfdan's father, a stock broker in Oslo, were among the pioneers of skin diving in Norway. Halfdan reports that his mother is the one member of the family who is not at all fond of diving.

Halfdan has been diving about two years and uses Pro scuba equipment. His favorite spot is on the southwest coast of Norway near a small, and very

## WINNERS !!!

Congratulations to the following ten winners in the Junior Fin Fans Contest who have been awarded a one year subscription to "Skin Diver Magazine." If you were not a winner this time, we hope you'll try again in future contests.

Roger Silhavey, Stratford, Conn.  
Michael Percival, Salem, Ore.  
James A. Meloon, Kenmore 23, N.Y.  
Neil Z. Melman, Rochester 21, N.Y.  
Alan W. Kempke, Cocksfield, Md.  
Eugene Newman, Marblehead, Mass.  
Jack Mooney, Overland 14, Mo.  
Pete Span, Phoenix, Ariz.  
Penny Span, Phoenix, Ariz.  
Steve Jepson, Cumberland, R.I.

old, fishing village called Krageroe. Here he enjoys the calm water between the innumerable small islands. The history of this area dates back over a thousand years.

From June to October is the best season for diving. The surface of the water remains at approximately 60 to 70 degrees, but below ten to twenty feet it is much colder. That is why he always must wear a rubber suit. Halfdan uses a yellow Skooba-Totes dry suit.

There is an abundance of fish, mostly small ones, but no marine animals considered dangerous. He uses a hand spear, but spearing fish is not very exciting as the biggest fish weigh only about 10 pounds. Although he occasionally spears eel and flounder, the most fascinating catch is the big lobster he grabs by hand. In the summer, he dives 50 to 60 feet down for lobster as they live in cold water. Halfdan reports: "No regulations exist as to the number or means for underwater fishing. So come along and join me!"

His favorite seafood is lobster, as this



Halfdan's favorite diving spot is in the vicinity of Krageroe and the Tomfruland (Virgins Island Lighthouse).



Halfdan, Evelyn and Aksel Kierulf often use their 22 foot boat while diving the fjords of Norway.





Hardanger is typical of the majestic beauty to be found in Norway. The many fjords offer excellent diving conditions during the summer months..

(Photo by Norwegian Information Service)

is especially good due to the cold Norwegian water at greater depths. He simply boils the lobster and serves them with green salad and Norwegian majones. This dressing is made of eggs, oil and a little vinaigre (vinegar). He has no unusual recipe for lobster, which proves that simple things are most often the best ones, the world over.

Halfdan considers the underwater scenery on the southern coast most interesting. The bottom is very rugged and changes from steep rocks to sandy shores. Caves are rare and coral does not exist in Norwegian water. Due to the enormous quantity of plankton, these areas are well stocked with fish. In all waters, visibility changes very much with the quantity of plankton. The best visibility occurs in the spring and autumn, but seldom reaches more than 40 feet.

Diving with snorkel and mask is very popular during the summer months. Nearly all youngsters are practicing this sport. Scuba diving is limited, however, to about a hundred. That is why there are no regulations as yet, and this of course makes diving especially exciting.

There are very few clubs in Norway. The best known are "Neptun," in which Halfdan is a junior member, and "Oslo Undervanns Klubb."

Halfdan is seriously considering a career in oceanography, but will probably start out by doing his military training in the Navy as a frogman. His present grade at school is called the 4th "Realgymnasium" and is roughly equivalent to Junior College in Ameri-

ca. Secondary education in Norway is based on the three year "Realskole" or the five year "Gymnasium." The latter stresses the sciences, languages and economics. Halfdan is majoring in mathematics, physics and chemistry.

In the meantime, Halfdan uses his leisure time to enjoy one of the most exciting phases of diving—exploring wrecks. So far, no major discoveries have been made along the Norwegian coast. However, some guns were raised that date back about 250 years and are now being studied by the museums.

Halfdan has been down with members of Neptun to explore a Dutch wreck which sank 300 years ago. They found clay pipes, bricks and pottery. This wreck was in calm water about 40 feet down. Unfortunately, at that time, they lacked proper equipment to enter the ship. Last summer another underwater club entered the wreck and discovered a large amount of pottery. This Dutch pottery will now be exhibited at the Museum of Shipping in Oslo. Halfdan was glad this "treasure" was found but would have been still more happy had he been there at the time.

"I am convinced that there are many interesting discoveries to be made in Norwegian waters, and I will do my best to prove this. Takk for nu! (Thank you for the time we've spent together.)"

## JUNIOR UNDERWATER MAILBOX

The following would like diving Pen Pals. Why not add your name to the list? Just send your name, age and address to: Junior Fin Fans Underwater Mailbox, c/o Skin Diver Magazine, Lynwood, Calif.

Thomas Bockeratette, 11  
58 Gambier Circle  
Cincinnati 18, Ohio  
Donald Isabell, 14  
4001 S. Ocean Blvd.  
S. Palm Beach, Fla.  
Thomas Flynn, 13  
406 Washington Blvd.  
Sea Girt, N. J.  
Jerry Crawford, 15  
2004 W. Harvey  
McAllen, Texas  
Roger Forrer, 13  
211 Westgate  
Wadsworth, Ohio  
Diana Raczka  
Box 17  
Farnham, N. Y.  
Mike Baird, 15  
1600 Randalia Dr.  
Fort Wayne 3, Ind.  
Kermit Zieg, 16  
Black Horse Troop B  
Culver Military Acad.  
Culver, Ind.  
Susan Whitl, 15  
3768 Frontier St.  
San Diego, Calif.  
Patrick Clayton, 13  
1316 Pennsylvania Ave.  
Springfield 4, Mo.  
Roger Wiggins, 11  
9942 Fielding  
Detroit, Mich.  
Paul Dorsey, 15  
225 Prospect St.  
Belmont 78, Mass.  
Dennis Davis, 14  
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Maine  
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4019 Memphis Ave.  
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1661 S. E. 10th St.  
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Lansing 12, Mich.

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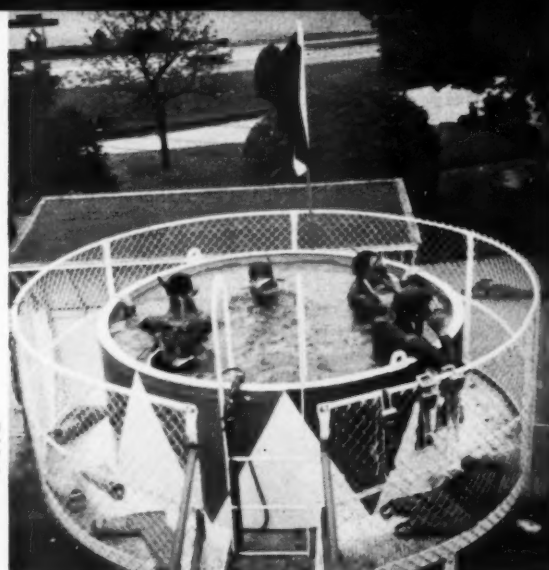
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Tank is surrounded by visitors and prospective divers who carefully look over the attractive structure.



Upper deck of diving tank. Catwalk provides room for entry and exit and a place to don equipment.

NEW DIVERS AND EXPERTS APPROVE  
THE NEW . . .

# B. C. DIVING TANK

By GLENNYS CHRISTIE

**S**KIN DIVING in Vancouver, British Columbia, has been given a real shot in the arm, or whack in the wet suit, in this case. All this has come about because of a training tank used to train future divers by Marina Diving Centre, Ltd., owned and operated by diving enthusiasts Guy Walters and Peter Cuming.

The training tank is situated at the end of Georgia Street, near the entrance to Vancouver's beautiful Stanley Park. Its prominent position at the harbor's edge stimulate a city-wide interest in skin diving. The tank is an arresting sight; vivid white, green, yellow, and black abstract patterns form a fish and boat design; and red and white Divers Flags fly in the breeze above the tank.

This training tank has been used by Marina Diving Centre for training purposes since May, 1959. Public response indicates that this type of training is most valuable. Perhaps the most unpredictable obstacle to skin diving is the mental bloc. And this is where the training tank comes in. It more closely approximates the height and depth factors encountered in actual skin diving than does pool-training alone.

The task is particularly useful for

practice in equalizing pressure in the ears. The 20-foot depth gives a more realistic approach to pressure-equalization than the 8-foot depth of a standard swimming pool. Standard diving techniques are taught and practiced in the tank: use of the snorkel, mask and fins; duck dives and surface dives; and the tank is particularly good training-ground for buddy-breathing and ditch-recover practice.

This tank is the largest of its kind in commercial use in Canada. It is made of quarter-inch steel plate and was fabricated by Dominion Bridge Company, Canada's largest steel fabricator. It is 20 feet high, eight feet in diameter, and contains 10,000 gallons of water. The tank was originally filled by the Vancouver Fire Department in a matter of minutes. The water is clear and filtered, and can be heated to a temperature of 90 degrees.

The training tank has eight plexiglas portholes around its circumference. These are set at eye-level and serve a two-fold purpose: they give the public an excellent opportunity to see a first-hand demonstration of skin diving methods; they enable students to observe the instructor closely while not actually in the water.

The course given at Marina Diving

Centre is comprehensive. It consists of six hours of theory a week and two one-hour sessions in the training tank. After successful completion of a two hour written examination, fledgling skin divers are entitled to all club privileges of the Marina Diving Club. Approximately twenty students take the tank-and-theory training each week. During the classes all necessary equipment is supplied to the students by the Centre. This gives them an opportunity to try various regulators during the course before deciding on the type they prefer.

The instructor can take four to six students down in the tank at any one time. They can familiarize themselves with skin diving techniques by standing in the tank, watching the instructor, when not actually in practice themselves. Enthusiasm is so great for this unique type of skin diving training, that the tank may soon be bulging at its strong steel seams. In a few short months, classes swelled to the 20 students a week. If the increase continues at its present rate, the training tank will soon be hopping with swarms of potential skin divers.

Interest in the courses and tank-training at Marina Diving Centre is a reflection of the tidal wave of en-



thusiasm for skin diving that is sweeping the whole of British Columbia and Western Canada. It is estimated that five years ago, in the Lower Mainland of British Columbia alone, there were about fifteen divers. Two years ago there were about 200, and today the number has skyrocketed to between five and six thousand organized and unaffiliated divers.

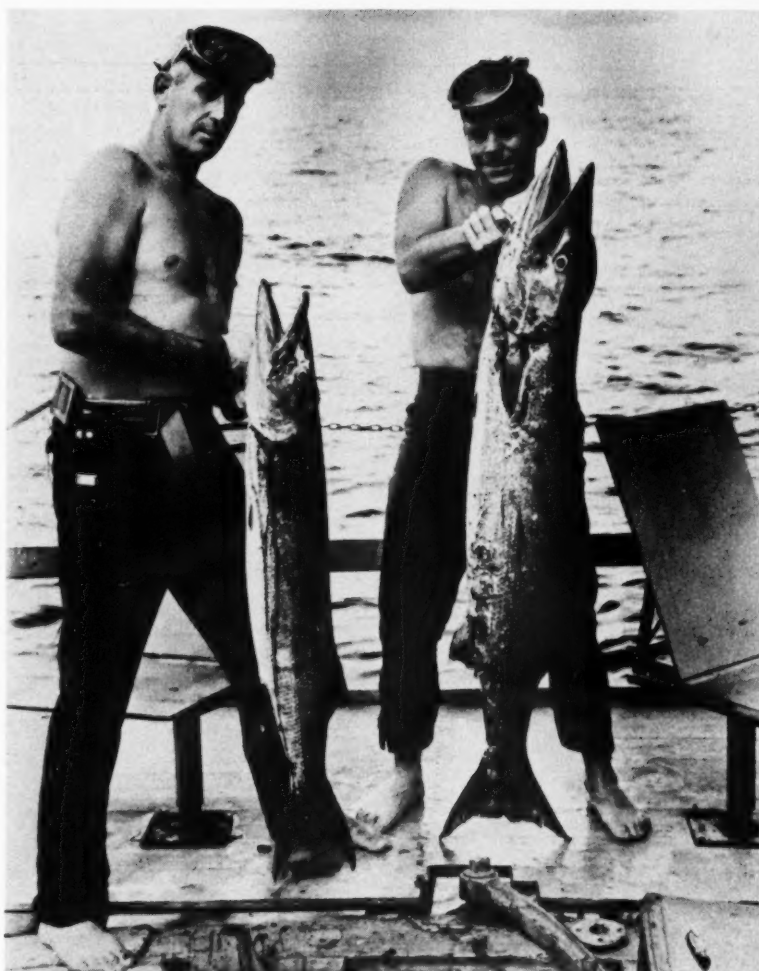
This gives an indication of the extent to which the skin diving bug has bitten British Columbians. The epidemic, in fact, has spread right across Canada at a fantastic rate.

The big boon to skin diving in this area is accessibility. This is truly a skin diver's paradise, with its scores of rivers, and thousands of miles of seashore and lakeshores. Being a skin diver in Vancouver is like being a kid in a candy-store with a pocketful of change and the shelves stocked with goodies.

The goodies in the skin diver's case are the almost unlimited diving areas to choose from, the absence of dangerous sea life, the extreme clarity of the waters, and the vivid colors and teeming marine life underwater. To many experienced skin divers—from the Caribbean to the Atlantic—British Columbia's are the "best diving waters in the world." For the spearfishing diver there are ling cod, octopus, rock cod, crab, oyster, and abalone. For the photographer, geologist, or oceanographer, there are almost limitless possibilities in one of the least-explored areas in the world.

As an aid to the growing community of skin divers in Vancouver and the Lower Mainland of British Columbia, Marina Diving Centre, Ltd., gives two to three reports a week on local skin diving conditions, diving finds of any importance, and information on skin divers' social events. In addition, a weekly safety tip is circulated. Two such tips, for example, have been a warning to divers to keep spear guns unloaded when leaving or entering the water; another has been a suggestion that suits with a strip of color, rather than all-black hoods, be worn as a preventive against accidents.

From the Vancouver training tank to the lakes and coastal waters of British Columbia, skin diving has become a topic of major discussion and excitement. This sport, though relatively new to British Columbia, has become a big thing. And Marina Diving Centre's training tank offers a unique way for the ever-growing "fraternity of future frogmen" to school themselves in the correct methods and safety procedures of skin diving. So move over, Neptune, another class just left the tank! ➤



#### PUPIL TEACHES TEACHER . . .

Joe Houghton, holding largest 'cuda, went out under the oil rigs off Timbalier Island in the Gulf of Mexico to learn from Gil Gillespie (left). Apparently Gil is a terrific teacher. 43 pound fish, largest 'cuda taken in Louisiana in 1960, is happy result of underwater classwork.







Norman Tilford holds bass as Shah Ali, the boatman and villagers look on in admiration.



Author holds two lobsters taken in three feet of water within reach from rocks.

By Norman R. Tilford

# DIVING IN PAKISTAN

**M**y diving friends had sworn I was daft when I proposed to fly diving gear, weights and all, halfway around the world from our home in Redondo Beach, California, to my new job as a geologist in West Pakistan. My wife moaned that we only had 66 pounds of weight allowance apiece and besides, that old smelly black bag just didn't match the luggage. Now the last laugh was mine. These were my thoughts as I staggered from the Arabian Sea near the fishing vilage of Buleji, just 15 miles from Karachi, Pakistan.

In complete elation, I had just finished one solid week of what must be some of the most wonderful and virgin diving in the world. To satisfy the safety-minded, buddy-diving reader, I must say that I had spent the better part of my first day in Karachi on one week vacation trying to find someone who could dive with me without avail. Dur-

ing the entire week no one could be found who had even heard of skin diving. In a city with an estimated population of two million, it is possible that I missed a connection, but not probable. There is one sporting goods store which handles shafts, heads, and golf club handles, luckily, since the only piece of necessary equipment not in the odoriferous black bag was a gun. With these materials and the remains of an inner tube was fashioned an effective Hawaiian sling.

Since information about diving had not been forthcoming, the next step involved some prospecting, so with wife, son, picnic lunch, and diving gear, I rented a 25 foot sailboat with crew from the dock at Keamare in Karachi. From there we proceeded out of the harbor, past freighters, tankers, and anti-aircraft batteries, to the wreck of a freighter lying in about 50 feet of water only one mile from



the docks. The captain of the boat assured me that "plenty big fish here, Sahib."

And right he was. I was in the murky water perhaps one minute when I saw a bass probably about 200 pounds, in any case too big for either my sling or my suddenly shattered small fish acclimated nerves.

During that day and the next, when we returned to the wreck, I rubbed fins with fish that were either too small, perhaps 10 pounds, or too big, and fired only once. Diving down along the rudder at about 25 feet, visibility about six feet, I came face to face with a dark colored, insolent bass of perhaps 100 pounds. Hastily cocking the sling, I hit him high, just behind the gill opening. Seeing that the shaft had not penetrated, I lurchingly jammed it home.

Of the next minute I am confused. Spun, turned over, taken deep, and finally spewed out on the surface alone, I made for the boat a few feet away. Hoisting myself aboard, I looked at the remains of my sling; one rubber broken, the head gone, and the shaft bent almost completely double. Time to look for clearer water and smaller, less belligerent fish, I thought. Wife, checking my insurance policy, agreed.

The next day we were taken to the fishing village of Buleji by a greedy, but agreeable taxi driver who assured me that the people there would be able to help me. My first impression was mixed. On alighting from the car, I saw three men cleaning a respectable shark of five feet on the sand. Turning as a man rushed up, I saw in his hand two equally respectable lobster, though not five feet long.

With the taxi driver as interpreter, we made arrangements with one of the villagers, Shah Ali, to go out where the water was "pukka saf" or clear. Mounting a beached 18 foot sailboat just wide enough for sitting, smelling of rather old fish catches and with a multitude of cans for bailing, we were pushed off by perhaps 30 pairs of willing hands. The taxi driver, whose meter was happily purring, rode along as guide and translator. Clearing the beach, we sailed westward along the coast for perhaps a mile, turning abruptly in to within 50 feet of the first rock shore I had seen, and anchored. This, explained Shah Ali through our interpreter, was the fish "junction."

Looking over the side and almost tipping the boat over, I could see rocks below at about 25 feet. The fever to be in the water rose frantically at that moment, and I hastily donned my suit, much to the consternation of Shah Ali, who had been vocally wondering how one expected to catch fish without hooks and line, and what was in the black bag. He regarded the sling as a gaf of some sort. Into the water I went, to the accompaniment of much excited babbling in Urdu, and looked around.

Here was heaven! Up, curiously, swam a giant turtle, as large as I. That was the beginning. Swimming to within six feet of the rocks, I dived, busy examining beautifully colored small fish, seeing the waving antennae of lobster poking out of every crevice. Suddenly I came upon the entrance to a large cave eroded in the soft sandstone. Just inside the entrance there were perhaps 30 fish from 15 to 70 pounds, unconcerned and uninterested. Scrambling for the surface, grabbing air, and returning, I swam among them, and as they started to scatter, picked one and hit him squarely. After much argument I had both ends of the shaft firmly in hand and went up.

Treading back to the boat, I was greeted as a prodigal, and had made an adoring friend in Shah Ali. To take a fish of such magnitude from the water with one's own hands, and for Ali to be privileged to be one of the witnesses was cause for thanks to Allah.

The day continued at a leisurely pace, since game was

so abundant. After four fish, I stopped shooting and started staring. The lobster were smaller than the domestic variety but incredibly abundant. The visibility was around 30 feet and the area was floored by large boulders and outcrops of sandstone which were covered by short sea grass and multi-colored small growths. The fish population was extremely varied and colorful, particularly the smaller varieties. Large turtles were quite numerous and often had barnacles and shrimp clinging to their shells. That day I hitch-hiked my first turtle ride. The day was made complete for Ali when I brought him several hooks and lines and one small anchor. This hardware represented more money than he could earn in perhaps two weeks.

We returned to this strip of coastline for the next three days, diving from the rocks along every portion which can be reached conveniently by car, and finding wonderful things each time. The second day I was eager to try my hand at turtle landing, quite foolishly picking the largest mossy-back I could find. Grabbing him firmly in hitch-hiking stance, just behind the head on the shell, I started to convince him that he should come to the surface, be beached, released, and thus forever immortalized on 8mm movie film as the protagonist in an epic struggle being recorded by my faithful wife from shore. Finally, one torn suit and one tired man later, we both came out of the crest of a comber and were stranded on the rocks. Relaxing my grip, I looked eagerly up to smile for the birdie. My wife was about 50 years away, chasing our three-year-old son away from a shallow tide pool which he was determined to enter in pursuit of crabs.

Men, take your wife diving, but don't take her along to watch or take pictures! As I sat, exhausted, disgusted, the turtle winked and plopped back into the sea. Later, somewhat recuperated, I tried again on a much smaller specimen, having chained my photographer to a rock facing the sea, with much more success.

On the last day, in order to give concrete information to those who might be inclined to question vague claims of the abundance of game, I had my helpmate check the elapsed time necessary to go into the water from shore, get ten lobster, two at a time and bring them to the shore in pairs, with no equipment except two hands. Sixteen minutes, gentlemen, total! By way of an appendix for those who may possibly dive in these waters, let me add the following information from my meager, one week store of knowledge. There are sharks, but diving is very good close to shore and the fishermen gave me to understand that all sharks are netted from seven to ten miles to sea.

Anyone coming to Pakistan should bring all equipment they desire to use, including spares. No air is available, so tanks are of little use. There is to my knowledge no equipment available, and if there were, Pakistan's 125 percent duty on imported items would make any purchases a very expensive proposition. Although the majority of people here are extremely poor, earning less than 50 cents a day in metropolitan areas,

American style accommodations are expensive but necessary, especially with regard to food. The traveler should expect to expend the equivalent of twenty dollars per day per person for lodging, food, and automobile transportation to diving areas. If a boat is used, plan to use sailing craft at the rate of about six dollars per day or power craft at about twenty-five dollars per day. Bartering for all goods and services is in order. If one is concerned, as I am, about disposing of game shot without waste, you will find that the local people are more than eager to get seafood, since their strict laws prohibit eating meat during two days of the week.





**1** Diver Bob Brown grimaces at job ahead as he comes up from cold depths.



**2** Ahhhhh . . . A deep breath of sweet, relatively warm air sure does a man good.

*Out From . . .*

# UNDER ICE

BY ROBERT BROWN

(Photos by Jean Boyce)



**3** Getting out isn't as easy as getting in. First you get some kind of a hand hold then . . .



**4** Quickly throw one leg up onto the ice, getting another hand hold at the same time.



**5** "Somehow" roll over onto your side on the ice, being careful not to roll back in.



**6** Stand up and wave at the crowd that has gathered to watch your amusing antics.





"Tell me more about this helmet squeeze stuff, Dad . . ."

(Photo by Dick Anderson)

## NATIONAL ASSOCIATION OF UNDERWATER INSTRUCTORS

The Board of Directors of the National Association of Underwater Instructors is sorry to report that due to the cold in the Midwest during the month of March that enrollment for the course to be held at Parks College is not expected to be high enough to hold the course there. Thus with great regret the Board has cancelled the course for Kansas City.

However, the Board of Directors has planned four additional courses this year and plans are far enough along that we feel location announcements can be made in the April issue of "Skin Diver Magazine."





## **MASK AND FLIPPERS**

**By  
LLOYD BRIDGES**

**as told to  
BILL BARADA**

**I**N THE YEAR 750 B.C., a young Greek sponge diver attacked an invading Persian fleet single-handed and saved his home city of Byzantium from pillage and murder. By attaching lines from underwater, the waiting ships were pulled into shore one at a time and quickly dispatched by the handful of defenders. Panic-stricken, the remaining ships of the attacking fleet fled to less magical ports. The young diver's reward . . . money, lands, and a commission as captain and commander of Byzantium's new underwater defense unit.

Lloyd Bridges, as Mike Nelson, accomplishes this same rout of the bad guys once every week on the television series "Sea Hunt" and considers his reward just as valuable . . . the sincere friendship of the world-wide diving fraternity. Perhaps it can be summed up in the words of a skin diving Brooklyn cab driver . . . "What kind of a diver do you think I am? Take money from Mike Nelson? Hah, you're one of the gang down here."

With that mention, Lloyd Bridges drops his portrayal as Mike Nelson and launches into one of the most interesting, comprehensive books on diving to be published to date. With well-known diver Bill Barada as co-author, Bridges takes the reader from the days of sponge diving to modern scuba, all the while administering gentle doses of safety and facts and figures.

With the actual words of the figures who lived it, a history of skin diving is given. Pioneers who risked their lives in dangerous testing of equipment which has evolved into the near fool-proof gear we use today . . . author Bridges among them . . . reveal both humorous and serious anecdotes. Without whitewashing, fatal accidents are analyzed.

According to author Bridges, "Ever since I took on the character of Mike Nelson in 'Sea Hunt,' I became increasingly absorbed with diving. I liked doing as much of it as I could, enjoyed talking and reading about it. As the popularity of 'Sea Hunt' grew throughout the country I began to receive hundreds of letters containing all kinds of questions about diving, questions from children, from parents, from other divers. The attempt to answer them all fully and adequately was impossible on an individual basis, and it concerned me that I was not able to respond properly to the enormous expression of interest that was shown.

"One day I got talking about this problem with Bill Barada, whom I knew not only as a thoroughly experienced diver but as an articulate writer as well. We had learned that a publisher was looking for a new book on diving, so we put our heads together in collaboration, and in due time 'Mask and Flippers' was ready.

"It is our sincere hope that this material will be helpful and rewarding to its readers."

"Mask and Flippers" will certainly fulfill the hopes of its authors. Bridges and Barada go from the history and development of skin diving to modern diving as we know it. Basic equipment, the cold water barrier, pressure problems, limitations, food and fishing, dangerous marine life, salvage and treasure hunting, and a look at the future of diving are included. One special chapter is devoted to Hollywood underwater, an area in which Bridges is well qualified to speak as both a diver and an actor. Production problems of "Sea Hunt," its conception and growth, its humorous and serious sides are told with interesting frankness.

The author's own first attempts at diving as a boy are humorously re-

vealed. With one half of an old abandoned water heater, a length of garden hose and a paint spray compressor, he and two friends drew straws to see who would be "lucky" enough to get first try. Bridges "won," donned the contraption and head for the bottom.

In his own words, "Suddenly I noticed that the water was rising inside the tank. It was already high on my chest, and creeping toward my neck . . ."

That the world was near to losing the future Mike Nelson was the least of young Bridge's worries as he frantically struggled to kick off the heavy lead weights he had strapped to his feet to keep him upright.

The laws of pressure, which he can now explain in his book, were unfamiliar to him then. He only knew that when he breathed in, the water should rise slightly and when he breathed out it should recede. Unfortunately a person can only breathe out so much before breathing in again . . . which made little apparent difference to the water level anyway.

Up on the dock, miles away it seemed, Bridges didn't know that his friends were working frantically to restart the ancient, paint clogged compressor.

And his rescue had the same humorous serious overtones as his situation.

Spearfishermen will enjoy the author's accounts of the development of the modern speargun. A full chapter is devoted to present day spearing techniques with advantages and disadvantages of each type weapon listed. This chapter includes an account of the time Bridges was face to face with an ill-tempered, attacking killer shark only to have his compressed air gun burp politely and the spear drop harmlessly to the bottom.

Diving safety is one of the prime themes of "Mask and Flippers" but, unlike many other such publications, the safety messages are easy to take and presented in a way easy to remember.

In spite of some production difficulties resulting in technical diving errors on "Sea Hunt," Lloyd Bridges is an expert diver. Watching the show carefully will prove this. As for Bill Barada . . . his name is well-known among divers as one of the best.

"Mask and Flippers" was written by divers for divers . . . and anyone else who dreams of the underwater world and its beauty and danger. If you like diving literature, don't miss this one, available through "Skin Diver Magazine's" Underwater Bookshelf (#54) or your local bookstore, or through the publishers, Chilton Company, Philadelphia 39, Pennsylvania.



## FROGMEN

(Continued from Page 19)

a preliminary to the Normandy landings in June 1944, the Allies conducted intensive minesweeps.

Into action went the famous UDTs (Underwater Demolition Teams) which had their origin in the amphibious (Tarawa) campaigns of the Pacific. The task of clearing underwater obstacles and mines by demolition charges carried in and planted by swimmers was a Homeric endeavor calling for the utmost in courage and skill.

In their mine clearing exploits, the American UDTs performed some of the greatest feats of the war. Leading the first wave at Utah Beach, they cleared wide passages for the assault forces. At Omaha Beach, fighting through a maze of snares and traps, they were able to slash only a narrow passage. In this action they lost almost half of their forces.

Why does any man put in for this type of duty?

The answer, "We like it!" comes screaming from the throats of mud-caked UDT men during their third week of training. This period of training is aptly called Hell Week.

From dawn to dusk, dusk to dawn, for 16 weeks they undergo training designed to test human endurance. During that third week there is one day where they meet physical and mental tests that bring them to the near-breaking point. Mud becomes their home and explosions fill the air they breathe.

They climb into small inflatable boats, move out into the surf—the rougher the better—and wait until they are dunked. This tests and sharpens their skills for the time when such a spill could mean disaster. They're well protected. Their uniform consists of dungarees, kapok lifejacket and a baseball hat.

Sometimes the hat is replaced by a steel helmet. This usually happens when they crawl on their stomachs over sand and through half-buried tires. Then, when they least expect it, small demolition charges are exploded which send blossoms of sand into the air and cover them like rain.

In teams, the men lie down on the beach—but not to rest. Teamwork is all-important and one of the tests includes raising a heavy log higher and higher until it seems as though their arms will fall off.

There's a journey through the mud flats. They sit down in this mud, link

themselves together and form human "boats."

Then they race other human boats. They work their way through gobs of mud until they become half buried in it. Mud quickly finds a way of plugging up the nostrils and breathing becomes a difficult and sometimes desperate burden.

The day and Hell Week ends with the men miserable, mud-covered and exhausted. That's when they pull themselves up out of the mud and give out with their call. Some 25 per cent fail to get beyond this point.

After graduation from the U. S. Naval Amphibious School, men are assigned to teams for regular duty and are embarked on APDs for training afloat. This period generally is of the nature of an amphibious force operation, conducted under combat conditions. During their first taste of this type of operation, the newly finned frogmen swim alongside veteran team members.

Each UDT is a commissioned unit. It is self-sustaining in that it conducts its own supply, medical, communications and other administrative and operational functions in a manner similar to that of a naval vessel. Essentially, however, it is a combat team, highly trained to carry out specific missions of a pre-assault or assault nature. Thorough training and careful screening have made it possible for men of all ranks to execute the most difficult assignments.

Reconnoitering enemy shores, whether located in frigid polar regions or in shark-infested tropical waters, is the primary mission of the Navy's Underwater Demolition Teams. But whether this phase of their work or any of a half-dozen other hair-raising tasks they perform is more hazardous, would be difficult to decide.

Beach reconnaissance is only one phase of the work performed by UDT personnel. After a beach has been scouted by UDT men, and before the assault landings, these highly skilled swimmers swim back into the beach area lugging heavy packs of TNT and other explosives. Charges are skillfully fastened to both man-made and natural obstacles, with time delay fuzes attached to a main trunk-line. When the charges have been planted, all swimmers except two leave the area and are picked up by speeding boats.

The two fuze-pullers, on a signal, ignite the trunk-line fuzes and swim furiously for the recovery boat. Shortly after they are yanked out of the water as the beach erupts with an ear-shattering roar.

After blasting a lane to the beach,

the frogmen continue their work of clearing the beach area, improving landing points, blasting waterways through channels, and demolishing objects which may impede the landing operation.

Underwater Demolition Team personnel, both officer and enlisted, are all volunteers. And they must have a specific and valid reason for requesting UDT duty. Individuals who can give only vague, indefinite, or general reasons for volunteering are not wanted. Those who simply desire a change of duty or the incentive pay, or who are chronic mast offenders, "prima donnas," or antisocial, cannot be accepted.

If you think you'd like this type of duty, check over the requirements outlined in Art. C-7406 of the *BuPers Manual*. You'll find you must:

- Be physically qualified in accordance with the *Manual of the Medical Department* requirements.
- Be able to swim easily a distance of 300 yards in less than 15 minutes using at least three distinct strokes, such as crawl, back, side and breast.
- Possess an education of at least two years of high school or the equivalent.
- Be not over 30 years of age at time of assignment.
- Have no fear of the water.

If you are accepted for this type of training, you'll be headed for duty with either the Naval Amphibious Base, Little Creek, Va., or the Naval Amphibious Base, Coronado, Calif. And you'll be seeing some of the interesting sights of the underseas world.





## NATIONAL UNDERWATER ATHLETE OF THE YEAR



Bob Manicki

**B**OB MANICKI has joined the long list of champions who have been the outstanding athletes in the underwater spearfishing phase of Competitive Skin Diving.

Dr. Robert Washbon, President of the Long Beach Neptunes Club has these words to say about Bob Manicki who has received the highest honor available to a skin diver in the United States: "No one person in the history of the Long Beach Neptunes Club has participated in more competitive diving meets than Bob."

His outstanding ability and per-

severance as a competitive diver has won for him great respect and admiration by those he has competed against. Bob's unerring aim and his consistent ability to take outstanding catches regardless of whether the diving area is familiar or not has earned for him the honor of being a great champion in our sport.

But this is not all. Bob Manicki is also an outstanding club member, who never hesitates to give of his time unselfishly to promote club activities. He has served the Long Beach Neptunes faithfully as secretary, treasurer, vice-president and 1956 he was president of the club. That year, he was a member of the team which won the National Championship yet he was able to lead the club through a year of outstanding achievement.

Bob has always been one to promote the sport of skin diving by giving unselfishly of his time. His ideas and his enthusiasm and efforts are virtues he is well known for. Not only has Bob served his club well, he has also been an active representative member of the Council of Skindiving Clubs of Southern California and Greater Los Angeles area, the Underwater Spearfishing Committee of the S.P.A.A.U. and the Ocean Fish Protective Association of California.

Bob Manicki was severely injured by the propeller of a passing boat in 1957, while competing in the Pacific Coast Championship meet at Laguna Beach. He was hospitalized for two months and his chances of being able to compete again were considered to

be poor. However, Bob's great determination and will power enabled him to overcome his impairment. Six months later he was winner of our club's spearfishing meet.

Today Bob Manecki devotes much of his time and effort to promote water and diving safety for our sport.

Bob Manicki's enthusiasm and leadership with his ability to teach, assisted him in forming a team with two other divers who had had no outside club experience in competitive diving meets. This year that team won first place in all competitive diving meets which they entered, including the National Championship meet at Laguna Beach.

Bob won the highest individual aggregate honors of all divers participating in the U.S. National Spearfishing meet this year."

In underwater spearfishing, the only sporting section of the vast field of skin diving that has been standardized Nationally and in which underwater spearfishermen may obtain recognition on which no doubt may be cast, a champion proves his worth by his individual performance at Club, Inter-Club, Association, Regional and National Championships.

Underwater Spearfishing, thanks to the guidance of the International Underwater Spearfishing Association, Helms Athletic Foundation, Underwater Society of America and the stabilizing influence of the A.A.U., has developed far beyond any other phase of competitive skin diving.

Underwater target shooting, under-

*(Continued on Page 66)*

## OCEANOGRAPHY

*(Continued from Page 39)*

concept of the motions of subsurface waters and the continuity of flow in the sea.

But in many areas we are still primitive. Turbulence, for example. A common practice, when considering turbulence in describing energy and mass transfer in the ocean, is to adapt the equations of molecular viscosity and diffusion by introducing so-called "eddy" or "virtual" coefficients, changed more or less to fit field data. This, of course, can mask the actual processes taking place and frequently leads to order of magnitude discrepancies between theory and observation.

Vertical motion in the open ocean is essential to the maintenance of life, since it brings about the refertilization of the sunlit areas near the surface. No direct measurement of this motion, however, has ever been made, though the introduction of radioactive materials at depths is being considered (or the use of the oceans natural radioactive materials which apparently originate from the sediment at the bottom). This is more of the basic research on oceanography which will come in the next ten years.

Ocean-atmosphere relationships is another field of research. What is the long term effect on climate of the stir-

ring up of deep ocean water? If there is a variation of supply or temperature of water around Antarctica from year to year, how, and when, does this affect our climate, and by what mechanism?

The relationship between ocean and atmosphere makes the study of one necessarily include the study of the other, and many questions are yet unanswered.

Another area to be studied are estuaries and coastal waters, where too little is known about that part of the oceans nearest to man. For example, what are the mechanisms of sediment erosion, transportation and deposition on the shelf and in the surf zone? What is the relation between suspended and bed load? What role do sand ripples play?

This section of the oceanographic series contained many questions. But what, after all, is basic research supposed to accomplish? Oceanographic research, as any other scientific research, begins with unanswered questions and unproved theories and, in answering and proving, discovers new questions and theories and the cycle goes on to new enlightenment. The questions listed can be answered in the next few years with the right basic research. Many of them have already been partially answered, only waiting for more thorough study for positive results. The next ten years can bring these positive results.

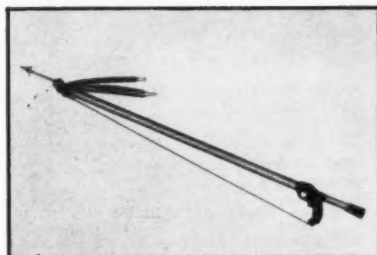
Next Month—Ocean Resources. ➤

Reference, Oceanography 1960-1970, National Academy of Sciences.

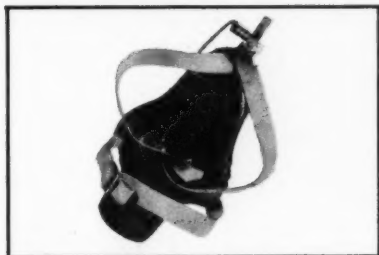


# NEW PRODUCTS

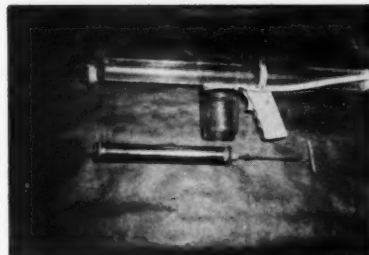
The New Products section is a regular editorial feature and is not comprised of paid advertising.



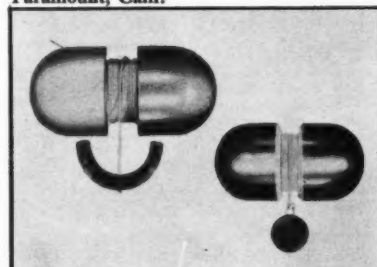
**SPORTSWAYS SPEARGUNS** — Deliver maximum power, accuracy. New handle and muzzle assemblies of high impact resistant Cyclac feature handling ease and durability. Among new features: "O" ring seals in barrel for easy assembly and disassembly, maneuverability, cocking stock, automatic line release, stainless steel shaft. "Competitor" (2 barb spearhead,) \$27.50; "Sportsman" (1 barb,) \$19.95. Made by Sportsways, Inc., 7701 E. Compton Blvd. Paramount, Calif.



**NEMROD BACK PACK**—Has form fitting design. Made of reinforced fiber glass, it is wing-shaped to distribute tank weight evenly and to prevent tank roll. Designed to accommodate practically all standard tanks, it is secured or released by an adjustable thumb screw in the stainless steel collar around the neck of the tank. Self-contained base allows tank to stand upright when in the pack. A product of Seamless Rubber Co., New Haven, Conn.



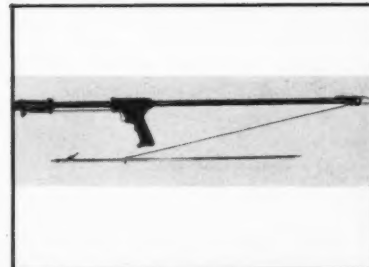
**SLURP GUN**—For fish collectors, does for them what the Arbalette did for spearfishermen. Designed by Dr. Wilson to catch small fish unharmed for salt water aquariums. Gun allows you to catch several fish without surfacing. Makes it possible to catch lightning fast gobies that were next to impossible to collect prior to the slurp gun's invention. Price \$29.95, from Ski N' Dive, 1900 Westwood Blvd., Los Angeles, Calif.



**SPOT-MARK MARINE POSITION LOCATOR**—Meets the needs of skin divers for lightweight, colorfast, inexpensive float that will mark the position of favorite lobster hole, lost object or sunken treasures. Spot-Mark Jr. is molded from highly polished butyrate plastic. Entire unit weighs only five ounces. Measures 2 1/2" x 4", comes with 60 ft. nylon line. Price \$1.95, from Stark's Aquatics Co., 3004 Warrington Rd., Cleveland, Ohio.



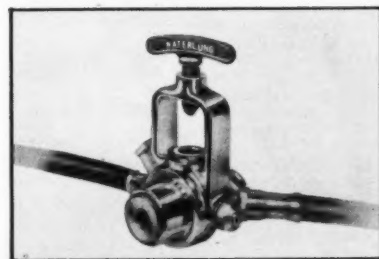
**NEW VOIT SNORKEL**—Has corrugated flexible tube designed to eliminate incomplete clearing. Corrugated bend is supported by coated wire, smooth on inner wall for positive clearing. Tube section is pliable to yield to underwater obstacles. Weight is reduced; has easy-breathing mouthpiece and strap adaptor. Comes in blue and white. Price \$2.95. A product of Voit Rubber Co., 2945 East 12th St., Los Angeles 23, California.



**NEMROD TORPEDERO**—New pneumatic underwater gun is powerful and accurate. Has exterior mechanism of chrome steel; trigger mechanism directly engages the spear shaft. When loaded, 461 pounds per square inch pressure drives spear 13 feet at an underwater depth of 15 feet. Features comfortable hand grip and thumb rest. Priced at \$19.95, the Nemrod Torpedero is a product of Seamless Rubber Co., New Haven 3, Connecticut.



**NEMROD WET SUITS**—Of 3/16" foam Neoprene, have high jacket collar and pants waist for warmth. Soft, smooth inside; outside stippled to make suit easy to pull on. Seams recurved, sealed with special adhesive. Std. model all black; deluxe model two-tone black with blue panel. Six nylon zippers make it easy to put on, insure snug fit. Matching hoods, 3-finger mittens, boots also available. Seamless Rubber Co., New Haven, Connecticut.



**SPORTSWAYS "MASTER DIVER" WATERLUNG** — Sportsways presents three new models for 1961. In addition to the Waterlung single-hose "Sport Diver," this is the new "Master Diver" with new compact design. Single forging first stage becomes almost integral part of valve. Has manual control clearing button, "Hookah" connector, Sea-Vue gauge port. "Master Diver" sells for \$67.50; with Sea-Vue pressure gauge, \$92.50. Sportsways, Inc., 7701 E. Compton Blvd., Paramount, Calif.



**HYDRO-POWER SNIPER** — Incorporated with gold dredge to tear away at crevices and stream bottom. A valuable accessory to regular gold dredge work in hard to get to places, the power sniper's jet action opens up cracks and fissures that are often overlooked. Vacuums by change of valve position, drops gold and heavy materials into bag. Price \$39.95 from Mel's Aqua Shop, 1911 S. Catalina Ave., Redondo Beach, Calif.





Diving Equipment and Compressed Air Stations—a national listing to serve the local and traveling diver. Advertising rate is \$30 for 6 consecutive ads—\$58 for a full year. PAYMENT MUST ACCOMPANY COPY. Send all material to Compressed Air Stations, c/o Skin Diver, Box 111, Lynwood, Calif.

## ALABAMA

### McWHORTER ENGINEERING COMPANY

Plant: 1053 Gadsden Road, B'ham  
Phone: VE 6-2814 or WO 1-9598  
24 Hour Service, large parking area

### SOUTHERN SKIN DIVER'S SUPPLY

506 So. 45th St. WO 1-3052  
B'ham, Ala.—Gulf Charter Information  
Open year round \$1.25

## ARIZONA

### HOLLENBECK'S

4041 N. 7th Ave. CR 7-9163  
Phoenix, Arizona  
8-9 seven days a week \$1.50

### SPORTS SPOTS

4226 E. Indian School Road CR 4-3863  
Phoenix, Arizona  
Hours: 9-6 \$1.50

## CALIFORNIA

### CAMERA CENTER & DIVE SHOP

719 So. Garfield, Alhambra AT 2-1886  
Hours: 9-6, Fri. 9-9  
Underwater Cameras, Dive Gear & Air \$1.25

### THE FROGMAN (SKIN DIVING SPECIALISTS)

701 N. Azusa Ave., Azusa ED 4-8050  
Hours: 10 'til 7; Fri. & Sat. 11 'til 9  
Sun. 10 'til 6 p.m. \$1.25

### SKI N' DIVE

14610 Lakewood Blvd., Bellflower ME 4-1221  
Open every day 9-7; Fri. 9-9  
Good ole' smogless air \$1.25

### SUNLAND SPORTS LODGE

8677 Wilshire Blvd., Beverly Hills OL 2-4990  
Hours: 10-7 Mon.-Sat. 12 fills \$10.00  
Wet Suit Rentals, Lung Rentals & Repairs

### AL'S SPORTING GOODS

Highway One Front of Pier WY 5-3748  
Cayucos, Calif.  
Hours: 7-9 \$1.25

### SAN DIEGO DIVERS SUPPLY, South Bay Branch

1084 National Ave., Chula Vista, Calif. \$1.25  
Hours: 9-6, 7 days a week  
The air you love to breathe

### BLUE STAR SUPPLY

2156 Pacheco Street  
Concord, California  
Certified Air 9:30-5:30 \$1.00

### THE SILENT WORLD

4354 Sepulveda Blvd. EX 7-7229  
Culver City, Calif.  
Hours: 9 a.m.-9 p.m. daily \$1.25

### PACIFIC DIVERS

1426 Colorado Blvd., Eagle Rock, Calif. \$1.25  
CLinton 5-7831  
Hours: Noon to 10 p.m., Tues. thru Sat.

### LOUIE THOMAS MARINE CENTER

343 So. Atlantic Blvd. Certified Air AN 3-0974  
East Los Angeles, Calif.  
Hours: 9-6; Tues. & Fri. to 9 p.m. \$1.25

### PONY EXPRESS SPORT SHOP

17460 Ventura Blvd. ST 9-6091  
Encino, Calif.  
Complete Line, Also Rentals & Repairs \$1.25

### DIVER'S DEN

1014 Pier Ave. FR 6-3656  
Hermosa Beach  
Open daily 9-6:30 p.m. \$1.25

### HOLLYWOOD SPORTING GOODS

6551 Hollywood Blvd. HO 4-1101  
4609 Crenshaw Blvd. AX 5-3138  
Daily 9-6; Mon. & Fri. 9-9 \$1.25

### DIVER'S HUT

7928 State St. LU 1-7782  
Huntington Park  
Open till 10 p.m., closed Sun., Tues. \$1.25

### BLUE FIN AQUA SHOP

910 Centinella Blvd. OR 4-1739  
Inglewood, Calif.  
Hours: 9:30 to 9:00, closed Sun. \$1.25

### SPORT CHALET

951 Foothill Blvd. SY 0-2717  
La Canada, Calif. 12 fills \$10.00  
Hours: 9-7, Mon. & Fri. till 9 Single \$1.25

### LAGUNA SEASPORTS

680 N. Coast Blvd. HYatt 4-6965  
Laguna Beach, Calif. \$1.25  
Daily 9-5:30; Sat. & Sun. 8:30-5:30; Closed Wed.

### LA JOLLA DIVERS SUPPLY

7522 La Jolla Blvd. \$1.25  
La Jolla, California — Cert. Air  
Hours: 9:30 to 5:30, closed Mon.

### AQUA DIVERS

1901 Pac. Coast Hwy. (Along P.V. Hills) DA 6-6663  
Lomita, Calif. 12 fills \$1.25  
Hours: 9-9, 7 days a week

### UNDERWATER SPORTS SHOP

11 - 39th Place (Belmont Pier) \$1.25  
Long Beach, Calif.  
Hours: 9-6; Fri. till 8; Open 7 days

### ART'S SKIN DIVING SHOP

660 W. Florence Ave. PL 8-6059  
Los Angeles 44, Calif. \$1.25  
Hours: 10-7, Fri. till 8

### CERTIFIED DIVERS, INC.

4420 E. Holt, Montclair \$1.25  
187 So. Glendora Ave., W. Covina  
Hours: 9:30-7:00

### THE FROGMAN (SKIN DIVING SPECIALISTS)

209 E. Garvey Ave., Monterey Park \$1.25  
Hours: 7 a.m. till 2 a.m. 7 days  
Phone: ATLantic 0-3323

### AQUATIC CENTER

4323 W. Coast Hwy. \$1.25  
Newport Beach, Calif.  
Hours: 9-6:30; 8-6:30 weekends

### CAL-AQUATICS

7423 Lankershim Blvd. \$1.25  
North Hollywood, Calif.  
Hours: Mon.-Thurs. 9-6:30; Fri. & Sat. 9-9

### STEELES SPORTING GOODS

5815 College Ave. \$1.00  
Oakland, Calif.  
Hours: 9:30-6; Thurs till 9 p.m.

### DIVE N' SURF

504 No. Broadway 12 fills \$10.00  
Redondo Beach, Calif.  
Hours: 9-6 closed Tues.

## THE DIVING LOCKER

4825 Cass Street \$1.25  
Pacific Beach, San Diego, Calif.  
Daily 9-6; Fri. 'til 9

## SAN DIEGO DIVERS SUPPLY, INC.

4004 Midway Dr., San Diego 10, Calif. AC 4-3439  
Hours: 7 to 10  
Certified Air \$1.25

## HARBOR DIVERS

308 N. Harbor, Santa Ana  
Hours: 10-7, Sat. & Sun. 8-8  
Phone JE 1-3176 12 fills \$10.00

## THE DIVERS DEN

Breakwater, Marine Center \$1.25  
Santa Barbara, Calif.  
Hours: 9-6; Friday 'til 9

## VALLEY DIVERS CENTER & SWIM SCHOOL

13731 Riverside Dr. State 8-6612  
Sherman Oaks  
Mon.-Thurs. 9-6, Fri.-Sat. 9-9:30

## TEMPLE SPORTING GOODS, INC.

9514 E. Las Tunas Drive AT 6-3308  
Tempe City  
Hours: 9-6, Monday and Friday 9-9 \$1.25

## NATIONAL METAL & STEEL CORP. OXYGEN DIV.

1251 New Dock St., Terminal Island  
Open 24 hours a day—Mon. thru Fri. \$1.25  
Immediate Service

## PAY-N-SAVE SPORTS & BOATS

6219 Van Nuys Blvd., Van Nuys \$1.25  
Hours: 8-6; Mon. & Fri. till 9

## WATER GILL DIVING SHOP

2547 Lincoln Blvd. EX 1-1210 - UP 0-8808  
Venice, Calif. 70 cu. ft. \$1.25  
Hours: 6 days 9-6; Fri. till 9; Closed Tues.

## SKI N' DIVE

1900 Westwood Blvd., Westwood GR 8-0609  
Open every day 9-7; Fri. 9-9  
Good Ole' Smogless Air \$1.25

## CONNECTICUT

### NEW HAVEN DIVING CENTER, INC.

14 Hemmingway, East Haven  
Week days 5-7; Sat. & Sun. 10-6 HObart 7-0163  
Closed Wed. & Thurs. \$1.25

### THE AERO AND PHYSICIANS GAS CO.

3171 Main St., Hartford  
Cert. Water Pumped Breathing Air  
Hours: 8-5:30 Mon.-Sat. JA 5-3131

### CHRISTENSEN TOOL & ENGINEERING, INC.

Mfrs. of Viking Diving & Air Breathing Equip. \$1.25  
500 West Avenue, Norwalk, Conn.  
Hours: 9-5:30

### REX MARINE CENTER

144 Water St., So. Norwalk, Conn.  
Open every day 8 a.m.-6 p.m. for winter  
Cornelius Compressor and Air Bank

### SURPLUS TRADING POST INC.

153 Boston Post Road, Orange SY-92037  
SY-92037 immediate refills \$1.25  
Hours: 8 a.m.-10 p.m. Mon.-Sat.

### WILL JACOBS

631 S. Quaker Lane AD 2-8719  
West Hartford, Conn.  
Noon to 8 p.m. daily; 10 a.m.-6 p.m. Sat.

## FLORIDA

### CLEARWATER PRODUCTS

1123 Seminole Street  
Clearwater, Fla. Phone 3-3145 \$1.50  
Hours: 8:30-5:00

### FISHERMEN'S PIER

Underwater Wonderland of Crystal River, Fla. \$1.25  
24 hr. Rental—Sales—Instruction

### HARBOR BEACH TACKLE & MARINE

2240 S.E. 17th St., Causeway, Ft. Lauderdale  
Rentals, instructions, repairs, trips  
Soap/water lub compressor, closed Mondays

### TARPOON SALES & SKIN DIVING CENTER

925 Palm Ave., Hialeah, Florida  
Mfr. of Tarpoon CO2 Spearguns \$1.25  
Retail, Wholesale, Rentals and Repairs

### LAKELAND SKIN DIVING CENTER

715 Alicia Dr., Lakeland  
Sales, service, rentals, instruction  
Phone: MU 3-4244

### SKIN DIVER'S HEADQUARTERS

South of Marathon Airport  
Marathon, Florida  
Formerly Bartlett Bros.



**LEONARD'S SPORTING GOODS**

Marathon Shores, Fla.  
Charters, instruction, rentals  
Diving equipment air station \$1.50

**MISSILE SKIN DIVING SUPPLY**

Box 756, Merritt Island (Cocoa Causeway)  
Diving Specialty Shop - Jewfish Center  
Ringside to Cape Canaveral NE 6-3077

**UNDERWATER SPORTS, INC.**

2219 Biscayne Blvd., Miami, Fla.  
Soap Lubricated Comp. Open 7 days a week  
Retail, Wholesale, Rentals & Trips \$7.5

**PALM BEACH SKIN DIVERS SUPPLY**

623 South Olive  
West Palm Beach  
Complete stock, air, rentals, repairs

**HOLLY'S SPORTING GOODS**

1235 Orange Ave., Winter Park, Fla.  
Florida's Diving Eqp. Hdqrs.,  
Twin Ingersoll-Rand Compressors Refills \$1.50

**ILLINOIS****AQUA HOBBY DEN**

8526 S. Racine, Chicago, Ill.  
Phone: ST 3-0130 Hours: 9-6 Mon., Fri. 9-9;  
Sat. 9-4; Air-Gas Station, Sun. 8-6

**THE DIVE-IN**

1440 West Fullerton, Chicago  
Daily 9-9; Sun. 9-1 Rix pure air \$1.50

**VERN'S SCUBA CENTER**

3917 N. Ashland Ave.  
Chicago 13, Ill.  
Hours: 9-9 \$2.00

**DIVEMASTER**

5643 W. 63rd Place, Chicago 38  
Mon.-Thurs. 8-9; Tues., Wed. & Fri. 8-6;  
Saturday 9-6 \$2.00

**EASY CAMPING, INC.**

1789 West Howard Street  
Chicago, Illinois  
Week days, 12-8; Sat. 10-5; Closed Sunday \$2.00

**ERICKSON POOL SUPPLIES, INC.**

3734 North Cicero, Chicago, Illinois  
SPRings 7-6530  
Hours: Mon.-Sat., 8-9; Sun. 7-12.

**GREAT LAKES DIVERS SUPPLY**

10745 S. Princess St. (6300 West)  
Chicago Ridge—Lessons, Sales  
Counseling for Beginners; Boat Charters GA 4-0658

**TUCK'S WATERSPORT STORE**

4414 N. Narragansett, Chicago  
Water pumped air  
7 days, Mobile Rix UN 7-9690 \$2.00

**SKEET MARINE DIVING CENTER, INC.**

Lessons, Rentals, Sales, Service  
1945 Maple Street, Evanston, Ill.  
UNiversity 9-9830. 24 hrs. Service \$2.00

**NORTHWEST AQUATICS**

3552 River Road GL 5-4661  
Franklin Park, Illinois  
Sales, Service, Instruction, Rentals

**DIVERS COMPRESSED AIR SERVICE & RENTALS**

400 River Rd. (U.S. 45)  
Mt. Prospect, Ill.  
Anytime but Mondays VA 4-5877 \$1.50

**UNDERWATER SALES & SERVICE**

520 East Ogden Ave., Naperville, Ill.  
Northhill Air Lung Distributors—Air Fills  
Phone: Elmwood 5-3680

**INDIANA****HANSEN'S DIVERS SUPPLY**

3750 Ridge Rd., Highland, Ind.  
Rix-Water-Lubricated-Compressor  
Hrs.: 10-6; Mon., Thur., Fri. 10-9; Sun. 9-11 a.m.

**IOWA****AQUA SPORTS**

Everything for the Skin Diver  
4026 Jersey Ridge  
Davenport, Iowa \$1.50

**KENTUCKY****WATER WORLD INC.**

308 W. Woodlawn Ave., Louisville  
Complete line of Scuba Gear EM 8-3028  
Service, Rentals, Instr, Salvage 10 fills \$12.00

**SKIN DIVER—March 1961****MAINE****UNDERSEA ENTERPRISES, INC.**

69 Government St.  
Kittery, Maine  
Hours: When we are not diving \$1.25

**CONGRESS HARDWARE & PAINT (TOMMY'S)**

273 Congress St., Portland, Maine  
Complete line skin diving eqpt. SP 2-5357  
Sales, service, rentals, lessons 10 fills \$10.00

**HARVEY'S SPEED & DIVING CENTER**

473 Stevens Ave., Portland, Me.  
SPRuce 2-6467/SPRuce 2-5532  
24 hours service. 10 fills for \$10.00

**MARYLAND****DIVER'S DEN**

8105 Harford Road NO 8-6866  
Baltimore 14, Maryland (Parkville) NO 8-7382  
Open daily 9:30 a.m.-8:00 p.m.

**MASSACHUSETTS****BELMONT BOAT COMPANY**

402-404 Trapelo Road  
Belmont, Massachusetts IV 4-5246  
Diver Jim's Scuba Air Station \$1.00

**NEW ENGLAND DIVERS, INC.**

42 Water St.  
Beverly, Mass. WA 2-6951  
7 days a week \$1.25

**JAMES BLISS & CO., INC.**

342 Atlantic Avenue  
Boston 10, Massachusetts \$1.50  
"Sales and Service"

**LAKEVILLE DIVER'S SUPPLY INC.**

109 Bedford St. (Rt. 18) Open 7 days  
Lakeville, Mass. Middleboro 1050-W  
Sales-Repairs-Rentals-Instr. \$1.50

**HIGHLAND TELEVISION CO.**

70 Main St., Melrose. Complete Eqpt.  
Hours: 9-6 Mon., Tues., Sat.; 9-9 Thurs., Fri.  
Closed Wed., Sun. 5 Min. Fill \$1.00

**SO-SHO-NE, INC.**

246 B idge St., Rt. 3A, N. Weymouth, Mass.  
Skin Diving Outfitters & Repair Station ED 7-3186  
YMCA and NEC Certified Instruction Fill \$1.00

**SOUTH SHORE SKIN DIVER**

591 Washington Street  
Quincy Point, Massachusetts PR 3-5452  
Complete Sales—Repairs \$1.00

**ANDY'S AQUA SHOP**

311 Bridge St., Salem, Mass. PI 4-8813  
Rentals, Sales, Instruction, Trips & Repairs  
7 Day Service Fill \$7.5

**SKIN DIVING SUPPLY CO.**

Route 6 & Main, Wareham  
Sales, Rentals, Repairs, Instruction CY 5-0285  
Open 7 days \$1.50

**SEACRAFT INDUSTRIES, INC.**

3A Church St., Wilmington  
Retail Sales & Service OL 8-3393  
Wholesale Distributors for all Major Lines \$1.00

**DIVERS WORLD, INC.**

751 Main, Rt. 38, Winchester, Mass.  
Instruction—Sales—Service  
5 Minute Refills—Light Salvage \$1.50

**MICHIGAN****DAVE'S SCUBA SHOP**

3162 Packard, Ann Arbor NO 3-0791  
EVERYTHING for the Skin Diver  
3-9 daily 9-9 Sat. and Sun. \$1.50

**SEAWAY DIVING & EQPT. CO.**

5725 S. Telegraph Rd.  
Dearborn 9, Mich. Tested Air \$1.50  
CR 8-6750

**SPORTS OUTLET**

5279 Schaefer, Dearborn LU 2-1892  
2280 Woodward, Ferndale LI 5-4884  
124 W. 4th St., Royal Oak LI 3-2630

**NEPTUNE SPORTS STORE**

4222 Woodward Ave. TE 1-3800  
Detroit, Michigan \$1.00

**SKIN DIVING & SKI SHOP, INC.**

18270 Grand River Avenue  
Detroit 23, Michigan VE 7-1995  
Daily 10-9; Sat. 10-6 \$1.00

**WATER SPORTS DISTRIBUTING CO.**

23322 Woodward Ave., Ferndale  
Phone LI 8-8508  
Dealer inquiries invited \$1.50

**DIVER'S DEN OF FLINT**

4505 Detroit St., Flint SU 5-8233  
Sales—Rentals—Instruction  
Open 7 days \$1.50

**DIVERS SUPPLY, INC.**

G-4142 Fenton Rd. near So. Plaza, Flint  
Tanks hydrostaticated  
8 a.m.-10 p.m. 7 days \$1.50

**GRAND RAPIDS DIVERS SUPPLY CO.**

502 Carrier, N.E. RI 2-2689  
Grand Rapids 5, Michigan \$1.50

**MILLER & BOERMAN**

330 W. Michigan Ave., Kalamazoo, Mich.  
8:30-5:30; open Wed. nites; closed Thurs. p.m.  
Complete skin diving supplies-rentals \$1.50

**ST. CLAIR DIVERS & MARINE SALES CO.**

24530 Jefferson, St. Clair Shores PR-7-9852  
Retail, Wholesale, Diving, and Boat Supplies  
Rentals, Repairs & Owens Boat Sales \$7.5

**AQUATIC & DIVING EQUIPMENT CO.**

2869 Pontiac Trail  
Walled Lake, Michigan  
9 to 9 MA 4-1417 \$1.25

**J. M. SPORTING GOODS**

Everything for the Skin Diver  
1079 Fort St., AV 4-3212  
Wyandotte, Mich. \$1.50

**MINNESOTA****BRAINERD SKIN DIVING SUPPLY CO.**

1302 9th Ave., N.E., Brainerd  
Phone: 829-5953  
24 hour yearly service \$1.50

**TRAVIS DIVING COMPANY**

16809 North Scenic Lane  
Hopkins, Minnesota  
All hours; phone WEst 8-4821 \$1.50

**DONALDSON'S**

601 Nicollet Avenue  
Minneapolis 2, Minnesota  
Regular store hours \$1.25

**JACK THE FROGMAN CO.**

4251 Nicollet Ave., So. 24 Hr. Service  
Minneapolis 9, Minn.  
Air filtered four times \$1.50

**MIDWEST SKIN DIVING SUPPLY COMPANY**

405 South Wabasha Street (at Concord)  
St. Paul, Minnesota \$1.50  
CA 4-7155 after hours call CA 5-0645

**ST. CLOUD SKIN DIVER CO.**

1703 3rd St. No.  
St. Cloud BL 2-1604  
Hours: 8 a.m.-9 p.m., Sun. 9-12 noon. \$1.50

**MISSOURI****INLAND UNDERWATER SALVAGE & DIVERS SUPPLY**

Wholesale & Retail  
9803 Wilson Rd., Kansas City, Mo.  
Phone: CL 4-7971 - CL 4-8500

**RAY GEORGE CO.**

3456 South Grand Blvd.  
St. Louis, Mo. PR 6-4568  
Diving Eqpt.—Boats—Evinrude Motors

**NEVADA****WHAMCO DIVERS UD-10**

2009 Linden Ave., Las Vegas, Nev.  
Hours: 9-6 Air Available 24 hrs. \$1.50

**NEW HAMPSHIRE****LAKES REGION DIVERS SUPPLY HQS.**

Weirs Blvd., Laconia, New Hampshire EN 6-4970  
Immediate refills/Sales/Service/Rentals  
Instruction. 7 days a week year round \$1.50

**LAPORTE'S SKIN DIVING SHOP**

Lake Sunapee, Newbury, N. H. RO 3-5353  
One of the clearest lakes in New England.  
Instruction—Sales—Rentals—Refills

**NEW JERSEY****BOB KISLIN'S SPORTING GOODS**

Everything for the skin diver at lowest prices  
701 Main St. PROspect 4-0900  
St. Asbury Park, New Jersey Refill \$1.50

**GUY'S SPORT SHOP**

A complete line for skin divers—rentals  
705 Ninth Ave.  
Belmar, N. J. MU 1-0089





(Continued from Page 59)

**CALDWELL SPORT SHOP**  
356 Bloomfield Ave., Caldwell, N.J. CA 6-2986  
"In Stock—A Complete Line of Skin Diving Equipment." \$1.50

**M & E MARINE SUPPLY CO.**  
George W. Kinsey  
Route #130, Collingswood, New Jersey

**DENVILLE BOAT & SPORT CENTER**  
"New Jersey's Largest," Rt. #46, Denville  
Complete Skin Diving Outfitters \$1.50  
Hours: 4:30 a.m. - 9:00 p.m. daily OA 7-3030

**SKIN DIVERS SUPPLY & SALVAGE CO.**  
326 Bloy St., Hillside, N.J. MU 7-2777  
Complete sales, service and rentals  
Hours: Mon.-Sat. 9 a.m. till 9 p.m.

**UNITY DIVERS SERVICE**  
251 Monticello Ave., Jersey City He 3-9204  
Open Thurs. eve. 6-9; Fri. eve. 6-9 \$1.50  
Sat. 10 a.m.-1 p.m.

**THE BOTTOM SHOP, INC.**  
229 W. Front St., Keyport, N. J.  
Hours: 10-9 daily; 9:30-6:30 Sat.; 9:30-1:30 Sun.  
Sales, Service, Repairs, Rentals

**GARDEN STATE SWIMMING POOL & SUPPLY**  
324 Main St., Madison Frontier 7-4400  
Rentals & Supplies 10 fills \$12.00  
Hours: 8-9 M-F, Sat. 9-6 July Single \$1.50

**M.B.M. DIVING SUPPLIES**  
188 Main St., Metuchen, N. J. LI 8-6841  
Refills & Supplies

**RAMSEY OUTDOOR STORES, INC.**  
Route 17, Paramus, New Jersey  
Single tank Air Pass \$10.00 per season  
Open 10-10—Single refill \$1.00

**DIVERS LOCKER**  
321 Smith St. VA 6-3875  
Perth Amboy, N. J. 12 fills \$10.00  
Hours 9-9 daily Single fill \$1.00

**4 DIVERS, INC.**  
56 Broadway  
Point Pleasant Beach, N. J.  
Sales—Service—Rentals & Air

**UNDERWATER SPORTS OF N.J.**  
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## PERSONALITY SPOTLIGHT

(Continued from Page 40)

got as far as Hawaii when her passport was mysteriously delayed and after weeks of waiting accepted her fate and handed in her resignation. A man had been hired in her place.

However, she had been stranded in a perfect spot for a fish enthusiast. While "waiting" she had a chance to study a special group of tiny tropical puffers at Waikiki Aquarium with the use of a small laboratory behind the aquarium. While in Hawaii she purchased her own face mask and saw her first fish speared underwater.

Upon her return to the United States and New York she received an offer from Professor Myron Gordon, a fish geneticist, to work as his research assistant at the American Museum of Natural History. While with Professor Gordon she worked on a research problem that was developed into a doctoral thesis. The problem centered around the reproductive behavior of platies and swordtails, the same kind of fish that were in her first home aquarium years before. In the next few years her project was supported by the Department of Animal Behavior, New York Zoological Society and finally the Atomic Energy Commission. She spent three years at the museum experimenting with fresh water fish.

Dr. Clark then became a part of a program entitled "Scientific Investigations in Micronesia" sponsored by the Office of Naval Research. The Pacific science board and the Navy wanted to learn more about the numerous little islands in the Pacific. Her diving increased tremendously while in the beautiful South Pacific and she learned the technique of underwater spearfishing from a master of the art, a native diver named Siakong.

In 1950 her research project was drawing to a close and she heard that under the Fulbright Bill students, research scholars and professors were being sent to various countries all over the world to pursue their specialized studies. Egypt was listed among these countries.

Eugenie arrived in Cairo on Christmas Eve 1950 and two weeks later saw the marine biological station at Ghardaqa, an isolated spot on the eastern edge of the Libyan Desert on the Red Sea. Among all the Red Sea fishermen she met, not one had ever used even the most primitive type of underwater goggles, a device tropical Pacific fishermen considered essential. After much coaxing she got one friend to try a mask. He learned to use the mask and was excited at the new view of his familiar sea.

"Going underwater in the Red Sea presents a remarkably abrupt change in scenery," she said. "I recall particularly a place 30 miles south of Ghardaqa called Sharks' Bay where this change impressed me the most. At one moment I stood on the hot sands of the barren desert; the next moment I found myself in one of the most beautiful places I have even seen, a refreshingly cool place, a submarine coral garden of brilliant colors and teeming with life. In Sharks' Bay the desert terrain drops suddenly beneath the sea and is transformed into a short fringing reef which dropped off a few feet and then turned into a slope."

"Sharks' Bay is still one of my favorite spots, but I haven't

been back," she said. "In this hemisphere, the coral heads near the garden eels in Nassau waters and Molasses Reef off the Florida Keys are among my top favorite diving spots."

While in Egypt her fiancé, Dr. Ilias Konstantinu, whom she had met and dated in New York, came to Cairo and the couple was married.

After the Fulbright scholarship was completed, the Konstantinus settled down in Buffalo where Ilias was finishing his residency in orthopedics. Eugenie settled down as a housewife and the Konstantinus started a family. Their first child, a daughter named Hera was born in 1952.

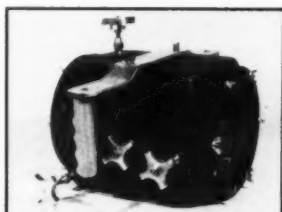
But domestic activities didn't divert the young mother from her career as an ichthyologist. She wrote her first book, "Lady With A Spear."

The book was read by Alfred and William Vanderbilt who were establishing a marine laboratory on Florida's Gulf Coast. They offered Eugenie the directorship. The Konstantinu family moved to Florida and Eugenie took charge of the laboratory when it opened in 1955. The study of sharks is one of the main projects at Cape Haze. In the past few years Dr. Clark has spent many hours studying and working with sharks. She has proved that the dull-witted beasts can be trained. At the laboratory they have succeeded in training sharks to ring a dinner bell by pushing a target with their noses at feeding time and then swimming to a particular spot to be fed.

Eugenie's work with sharks is concerned primarily with behavior and learning capacity. Her experiments are followed with interest by the Navy-sponsored Shark Research Panel which hopes to develop an effective shark repellent. Dr. Clark has written one of the chapters for a comprehensive volume on sharks to be published under Navy auspices.

As a side adventure to her work at the laboratory she accompanied two local divers, William Royal and William Stephens, in an underwater archaeological hunt of Warm Mineral Springs and Little Salt Springs. The trio uncovered some amazing human remains, including a skull with an intact brain inside probably thousands of years old. The recovery was made in caves with stalactite formations 40 to 90 feet underwater. An article on the find was written for the scientific journal "American Antiquity" describing what may turn out to be some of the oldest human finds in the southeastern part of the United States. Through arrangements with Dr. Carl Hubbs at Scripps, a radiocarbon dating was made on a burned log in proximity with the human bones. The log turned out to be 10,000 years old. "This of course does not date the human bones to be of this age with any certainty," she said, "but the possibility exists."

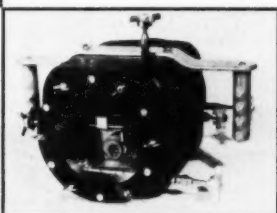
The Konstantinus have four children, Hera, Iris, Themistocles and Nikolas. Having four children in six years hasn't caused her to lose much time in the water. She didn't stop diving until a few weeks before her latest child, Nikolas was born; one week later she was back at the laboratory and within two weeks dived to a depth of sixty-five feet in the gulf. She believes that swimming has a therapeutic value for pregnant women. "At eight and a half months I made a two hour dive with a diving lung," she relates. "Just as soon as I entered the water I felt the pressures on my body go away. There had been swelling in my legs and it completely disappeared."



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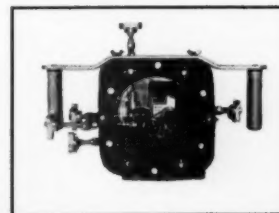
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## KILLER WHALE INCIDENT

By W. E. FEUSS

ONE DRIZZLY, dreary morning last June our club went out on a charter trip to the island of Anacapa, located about 11 miles from the west coast between Santa Barbara and Point Dume. Approximately two miles from the island we spotted the weaving dorsals of the Orca, or more commonly known as the Killer Whale. After observing them for a time no further attention was given the pack since they seemed to head away from the island.

We found a suitable spot upon arriving at our destination and three hearty souls immediately entered the water to hunt and explore the beautiful bottom surrounding the island. The rest of us crowded into the warm cabin since the day was still early and the water looked unfriendly and cool. A little before 8:00 o'clock one member went outside and promptly we heard an alarmed voice yell that the killers had closed in. Everyone scrambled outside and we observed that the large fins were now only two hundred or so yards away from the boat.

Naturally we were getting quite concerned about the safety of our buddies submerged—undoubtedly unaware of their increasingly dangerous position. We tried to think of every possible way to arouse their attention. The engine was started, the horn sounded, but all to no avail. Many tensely loaded their spearguns, which at the moment were ineffective, puny—seeming no better than rubber bands and bobby pins, and of course quite ridiculous. However these actions seemed automatic in our attempts to save our friends. The feeling of inadequacy can hardly be described.

The shoal of killers was now split, one group close to the bow, the other

(Continued on Page 65)

## DIVING NORTHLAND STYLE

(Continued from Page 31)

The most striking thing we note as soon as we are below the surface of the water is the formation of the ice. From water's edge to the surface of the ice, the thickness may be only three or four inches. Underneath it is quite a different story. Here the ice is jammed up in crystal clear pieces, to a thickness of 12 to 20 feet in huge grotesque pieces. Each piece is seemingly welded to the piece next to it. The whole formation is as though it had been there for centuries, when in reality it may have been there only a few short days, or even created the day before. Noting these formations of ice, we descend further.

The wreck below is a mass of broken, twisted steel, along a reef which goes from 30 to 135 feet with a length of roughly 100 feet. The reef is beautiful and wierd. The visibility is about 50 feet at a depth of 70 feet. Along this area we have wreckage above us for 40 feet and below us for another 50 feet or more. The main deck is partially there. We observe the hatches and the holds. A portion of her port bow is there with the anchor intact, and the chain inside the chain locker. Her side and deck plates are scattered in a helter-skelter fashion all over the reef. The winches, weighing about two tons, are still in one piece with hundreds of feet of cable still wrapped around their drums as if it were 55 years ago. One can almost picture a seaman of days of old operating these winches and their steam engines. This mass of twisted debris and steel seems to be a home for any orphan fish which happens along, although they usually don't stay after we reach the area.

We have been diving on this wreck all winter, usually staying down close to two hours each time allowing decompression time. This time as we were nearing the surface we watched our bubbles as usual. They were not breaking the surface! In our excitement and enjoyment we had forgotten the night ice. To get through this stuff can be very dangerous, yet interesting, and always exasperating.

Breaking through the ice is a trick in itself, but we have to break it to get a bearing on shore for our swim back. We have three methods of breaking through. One naturally is easier and quicker than the other two. The first is try and punch a hole through with your fist, sometimes nearly impossible. The second is to get

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about two feet below, give a good kick and come through head first, but this can be very hard on the old noggin.

The last and easiest way is with a knife. We found the knife best. Once through the ice we have to take a look around and get a bearing on shore. We were about 100 yards from the shelf, and from our hole in the ice. Here again, we have two ways to get back to the platform. One method is to remain on the surface, give a good kick, let our whole body fall on the ice and break the way ahead of us, continuing this until we reach shore. The second is much simpler, and much easier. Get a bearing on shore and follow a compass back to the hole. As you may have guessed by now, we usually use the knife and the compass method.

This is just an example of the diving we do here in northern Wisconsin. No poking a hole in the ice for us, when we can use the ice for our diving platform. This diving from ice into open water is the greatest, although people have recommended their psychiatrist to us. As yet, we haven't accepted a single offer. These few hours a week we dive give us a very good reason to live for the next dive, northern style.

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Page 72

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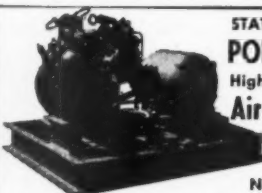
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## NAUI INSTRUCTOR

(Continued from Page 38)

try was then made to open the trunk with a crowbar, but to no avail. I could only open a very small area not large enough to see into or to probe. The trunk was the closest part of the car to the surface and I felt the girl might have either entered the trunk for the last remaining air or floated in. However, the trunk had to be left and I began my search pattern in an ever-widening circle around the car. I searched the bottom, the center and directly under the ice to the extreme circle edge 100 feet out. Visibility was very bad due to the stirred up silt. Hope of finding the third body faded and finally at 12 midnight it was decided to continue the body search the next day.

A cable was attached to the car in preparation for the next day when an attempt would be made to bring it up. A total of five hours had been spent at the site with two of the five spent underwater.

The morning of the second day was even colder. The temperature stood at 7 degrees. A few hours were spent watching the re-opening and widening of the hole with a chain saw. No attempt was made for an underwater search because of the car lifting operation. We still hoped the body would be found in the trunk or among the twisted wreckage. I returned home at noon for a few hours relaxation. At 4:00 p.m. a check with the Waukesha Sheriff's Department disclosed the car still hadn't been brought up. New instructions were given for the lifting operation.

At 7:00 p.m. I returned to the site, added a few more chains to the car and it was lifted out with no further trouble. On the way up the trunk sprung open, spilling its contents into the lake. If the body had been in the trunk it now was back in the watery grave. The trunk was completely empty, however a hole large enough

for a body to slip through from the rear of the car was seen. She was not found inside the debris filled car either. I re-entered the water to start another search. Bitter winds and extreme coldness of 2 degrees below zero ended the search at 10:00 p.m. The third body was still missing.

At 8:00 a.m. on the morning of the third day, a call came from the Waukesha Sheriff's Department. I gave instructions for men to cut four foot holes, 100 feet out and around the main hole and 100 feet apart. I also asked for hot water to be on hand to thaw out my equipment which froze within a few minutes after coming out of the water. The previous night we had to use hot coffee.

Everything was ready and waiting upon my arrival at 12:30 p.m. By this time the temperature had gone up to 18 degrees. Visibility was better and I discovered the third and last victim, 20 minutes after I started by search pattern. She was found off of the sand bar in 65 feet of water.

With the recovery of the third and last victim of this tragic accident, the holes in the ice were filled in with the ice taken from them to speed freezing. ➤

## BOATING DIVERS

Send us suggestions to improve boats for diving...anything to make your inboard or outboard, your skiff or yacht safer, more convenient and more enjoyable for diving. Each suggestion published in SDM will net a two-year subscription.

## BOATING SUGGESTION WINNER

John Haller  
2118 N. Kenmore  
Chicago 14, Illinois

Mr. Haller's suggestion . . . a bicycle innertube can be used to make entering a boat easier and safer. The diver's energy can be conserved by putting his arm through the innertube and having someone on the boat pull him up the ladder. When not using a boarding ladder the method works just as well.

Bill King  
1205 Oswego Road  
Liverpool, New York

Mr. King's suggestion . . . A couple of pieces of clothes line about seven feet long with halter snaps on the end makes a safe hauling line for tank, weight belt, fins, etc., which are shed in the water at the end of a dive. It works particularly well on larger craft when a tired diver can climb aboard without the heavy equipment.

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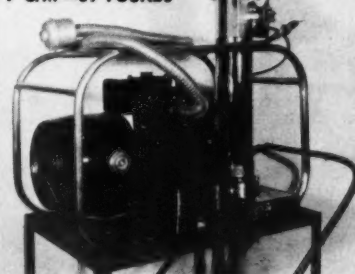
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## KILLER WHALE

(Continued from Page 62)

to port side, their bodies rolling gracefully over the surface of the water and their tails coming high out of the water and returning with a resounding echo. Then what we were afraid of happened. One of the largest orcas made a straight dive for the diver's bubbles about thirty-five feet from the boat. At this moment one of the diving trio surfaced with a fish on his spear. All of us on board shouted, yelled, and pointed, horrified with the belief that in a second we were to witness a never quite imaginable tragedy. The diver looked in back of him and immediately dived to signal his buddies to a hasty retreat—the big killer coming ever closer. After what seemed an eternity, the divers reached the ladder with the killer now as close as twenty-five feet from the boat. We expected he would sound, however he came along broadside and his beady, cruel eyes gave the situation a good going over. At his desire he could have snapped up one or all three of the divers. We on board literally snatched our imperiled friends from the water—another second and all would be on deck. This second we were granted by the unpredictable killer.

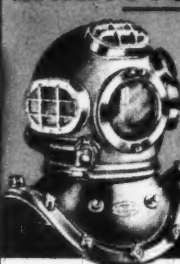
No one could take his eyes off the graceful, giant beast. It looked as if the big grampus, now slowly increasing its distance from the boat, was grinning at us. The size of this monster does not deprive him of the capability of tremendous speed and as mentioned before, comparable gracefulness. The dorsal fins of three of the group were so tremendous that they bent at the top and gave the appearance of a legendary sea monster.

Nine orcas were counted. However, in the excitement, there is a good possibility we overlooked some in the voluminous motion created by the herd. Their sizes were judged to range from fifteen to well over thirty feet in length.

After these anxious hours (actually minutes) we were still shaking yet very relieved. For a couple of hours such suggestions as selling equipment cheap and maybe taking up a safer sport (say "golf?") were quite frequent.

There seems to be no record of any divers death due to these mammal carnivores but their viciousness and kill lust is common knowledge. One can be certain that none of our members would wish to press an experiment regarding this possibility. Yet I am happy to say that no one present on that trip has ever given up the wonderful sport of exploring the vast and unpredictable sea.

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## UNDERWATER ATHLETE

(Continued from Page 56)

water and surface fin races have been some of the focal points for skin diving publicity. However, a record of any kind must have standards that have been set by some governing body that is recognized Nationally or Internationally in order to have clear cut meaning and prestige.

The National Championships Committee of the I.U.S.A. established general rules for the National Underwater Spearfishing Athlete of the Year in 1952 and submitted those rules to W. R. "Bill" Schoroeder, Managing Director of the Helms Athletic Foundation, asking for recognition of the outstanding athlete in our sport. The Foundation took it under consideration and generously consented to make this award.

The Helms Foundation not only awards recognition to outstanding amateurs but also to athletes in the professional field.

A few comments are appropriate at this time on the outstanding careers that have been subsequently carved out by the earlier National Underwater Spearfishing Athletes of the Year.

We should really start with Jim Christiansen who not only competed for the Owen Churchill Trophy in 1949 but also was the outstanding Skin Diver at the 1950 A.A.U. Championships at Laguna Beach, Calif. Had there been such an award at that time, Big Jim would undoubtedly have won the honor. Instead it was not until 1957 that Big Jim again was the outstanding competitor in the United States and due to his long experience was selected to Captain the first U.S. Team to compete at the World Championships in Yugoslavia in 1957. Subsequently, Big Jim Christiansen was chosen to select and coach the U.S. Team for the World Championships in Malta and Italy in 1959 and 1960.

In the United States in 1951, the sport of Underwater Spearfishing was undergoing intense growing pains that made it appear too unstable to have a definite future. However, Charles Sturgill, who had been skin diving since 1927, would probably have been selected not only for his continually outstanding performance at the Nationals, but also for the fact that he was one of the best all around skin divers in the United States and in 1951 had already been skin diving for over twenty years. He was also in

(Continued on Page 67)



## UNDERWATER ATHLETE

(Continued from Page 66)

the first three championships from 1949 to 1951.

For nearly a decade now Charles and Mrs. Sturgill have been on the Registration Committee of the Southern Pacific Competitive Skin Diving Committee Inc. Some of the best specialized skin diving equipment is put out by Charles Sturgill and he is always ready to help newcomers with their problems.

So much has been said about Dr. Mathison, the first Skin Diver to receive the Helms Athlete of The Year Award, that it is not necessary to again detail his many activities after skyrocketing into prominence as the nation's top skin diver in 1952. Nearly everyone has seen examples of his unusual photography on his skin diving expeditions to the remote corners of the globe.

Art Pinder, 1953 National Underwater Spearfishing Athlete of The Year, became known with his two brothers as the trio that won a decisive victory at the National Championships in Florida in 1954. Not only Art Pinder but also his brother Don have become so well known through their favorite activity that they have been able to capitalize successfully on their athletic fame. Everyone who has a television set has seen Art Pinder shave underwater and many an aspiring Skin Diver as well as the experts have been amazed at the ability that these brothers show underwater.

In this, the 12th year of standardized competitive underwater spearfishing, it is well to realize that however small the facet of competitive underwater activity has been in the era of skin diving, salvage, photography, geology, archeology, biology, etc., underwater spearfishing has led the way as the top activity of interest for the greatest number of people.

The first purpose of the International Underwater Spearfishing Association "to encourage Underwater Spearfishing as recreating and as a potential source of scientific knowledge" has truly proven one of the major means of attracting people to the underwater world.

Eventual Olympic recognition of this sport would insure an over-all increase in underwater activities and would give our sport the necessary status to make it acceptable on a large scale at a junior and age group level.

One of the best competitive performances in the United States this

(Continued on Page 68)

SKIN DIVER—March 1961



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## UNDERWATER ATHLETE

(Continued from Page 67)

year was made by Jay Riffe, a young man who started in the Junior Underwater Spearfishing Championships staged by the Laguna Boys Club of America. His placement was third, with Del Wren, a former Athlete of The Year placing second.

The present method for selecting the Athlete of The Year is as follows:

1. All catches must conform with the Fish & Game laws of the region in which taken, and with the rules of the I.U.S.A.

2. Performance limited to the continental U. S. and Territories, except in team competition outside the United States.

3. Must be resident and citizen of the United States.

4. Award may be made only once to the same person.

5. Club record of game fish taken by candidate. (As listed by the I.G.-F.A.)

6. Most outstanding single fish, shark or ray taken according to basic I.U.S.A. International Rules. (1) Completely submerged, (2) No artificial breathing apparatus. (3) Without assistance.

7. Nominations. Each Club is invited to submit one nomination, which may be the club's own outstanding member or anyone of their choice.

Mail nominations direct to Athlete Of The Year Committee, International Underwater Spearfishing Association, Los Angeles County Museum, Los Angeles 7, California.

**ATHLETE OF THE YEAR COMMITTEE OF THE I.U.S.A.:**

Kate Miller, Bill Schroeder, Braven Dyer, Jr., Jim Auxier, Wm. Stephens, Ralph Davis, Chairman

1952 — Dr. Mathison  
1953 — Art Pinder  
1954 — Pat O'Malley  
1955 — Franklin Hops & Ted Levchenko

1956 — Howard Patton  
1957 — Jim Christiansen  
1958 — Dellas Wren  
1959 — Terry Lentz  
1960 — Robert Manicki

### Film Service Listings

Due to the constant demand of readers, "Skin Diver Magazine" would like to compile a list of films available to clubs and groups on either a rental or no-charge basis. Since they will be used for both entertainment and education, the films may be on any diving subject.

Anyone having films available can be listed by writing "Skin Diver Magazine," Lynwood, California. The completed list will be published in a future issue.

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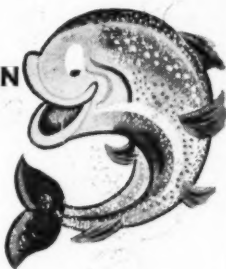
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## Reader's Ripples



(Continued from Page 14)

... I am writing on behalf of the Ramey AFB "Sea Lancers" a U. S. Air Force Skin Diving club in Puerto Rico.

We would like to buy or rent movie films on the subject of skin diving that may be used to train and/or entertain our club members.

If you know of a source of films of this nature please advise me.

It might interest you to know the Ramey "Sea Lancers" have an active membership of about 260 military and civilian members. Heading our military instructional staff are two members of the National Association of Underwater Instructors. We have in our minds, an outstanding training and checkout program. We are privileged to be able to swim in some of the most beautiful and productive waters in the Caribbean surrounding us here in Puerto Rico.

Please advise if you can assist in the subject of films.

Jan W. Janssen  
Major USAF  
APO 845, New York, N.Y.  
Ramey Sea Lancers  
P.O. Box #195

SDM is presently compiling a list of diving films which will be published soon in either SDM or Diving News.

... In your December 1960 issue, under "News Current" there is a communication from Edward Zillious who claims to have speared the first tarpon ever taken while skin diving.

This is just a note to pass on to you that Drs. Eric Geiger of Milton, Florida and Robert Tindall of Miami and I speared a number of tarpon in the Mangrove creeks of Key Largo as far back as 1952. I am sure that there have been many other tarpons speared in the south Florida area and doubt that Mr. Zillious has any record.

Robert H. Mudd, M.D.  
1729 Spring Hill Avenue  
Mobile, Alabama

... Hope you can help me find a "diving buddy," this is really an urgent SOS. I've searched high and low but have found that all the clubs I've contacted in my area are composed of fellows between 17 and 20 years old. I've also found that the invasion of a 23 year old gal into any these clubs would not be welcome by the guys, their gals or parents.

There's just got to be a niche somewhere for little ol' me. Doesn't anyone in the Bronx-Westchester area want a diving buddy???? If so please write me. I'M SINKING FAST...

Adrienne Rotundo  
2321 Sevmour Avenue  
Bronx 69, New York

... It would help if you would invite your readers to send case histories of accidental injuries and drownings to me, so that we could get a clearer picture of the problem which merit special attention.

Ralph Kuhli  
Director, Public Safety Dept.  
National Safety Council  
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(Continued on Next Page)

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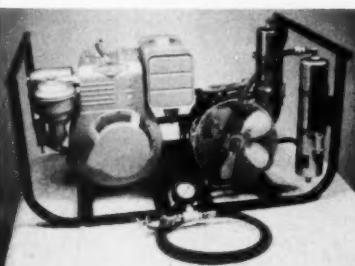
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## Reader's Ripples

(Continued from Last Page)

... I am sure others will agree with me when I say you have the most wonderful magazine I have ever read. Each month I look forward to reading your articles. I see nothing wrong with the magazine. As you would perhaps agree there could be room for expansion. I have an idea you could use. As a diver myself, this could be fun and informative for other divers also. My idea is to develop a couple of columns devoted to corresponding between divers via this magazine on problems they have and suggestions for improvement, hints, ideas, and just all around exchange of information. For example: One diver wishing to know how to clean some part, or where to get a piece of equipment, or any ideas others have found helpful. In other words, a question, answer column between divers.

Gerald A. Myers

... While on our way to dive in Baja California in June, 1960, we had an auto accident which left me with a broken back and leg and only partial use of my legs. I now walk with braces and crutches.

I have done much diving in the past and am especially interested in marine biology. I am quite eager to resume the sport that played such an important part in my life. If you or your readers could relay any information on problems encountered and how you mastered them I would appreciate it more than I can express. I would also appreciate information from readers or dealers on back packs for scuba gear that would hold the back in a firm position.

Erla Hackett  
447 Ninth Ave.  
San Francisco, California

... I would like to know if you have printed any articles in any past issues of "Skin Diver Magazine" on the subject of underwater log salvage or have any to be published in the near future. I would like to know the results of such projects and would like any information from other divers doing or who have done this. I'm a senior forestry student at Michigan College of Mining and Technology. I've done some log salvage myself and am doing work on this subject as a senior problem in forestry. I would be interested in any information you or other divers could give on this subject, and you may be interested in any information and research in the future.

Ronald E. Scott  
1812 A Woodmar Dr.  
Houghton, Michigan

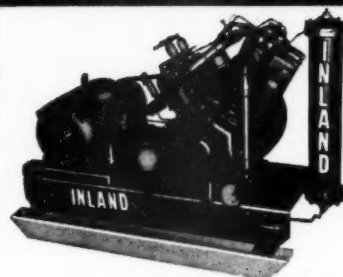
Underwater log salvage articles appeared in *SDM* in August, 1958 and April, 1959.

... Can you furnish me with a list of colleges on the East and West Coasts of the country that offer courses or extracurricular activity in skin diving? If not, can you direct me to a source of this information?

Phyllis Dubnick  
154 N. Lombard Avenue  
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See Reader's Ripples, November, 1960, page 7.

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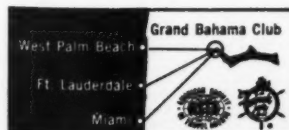
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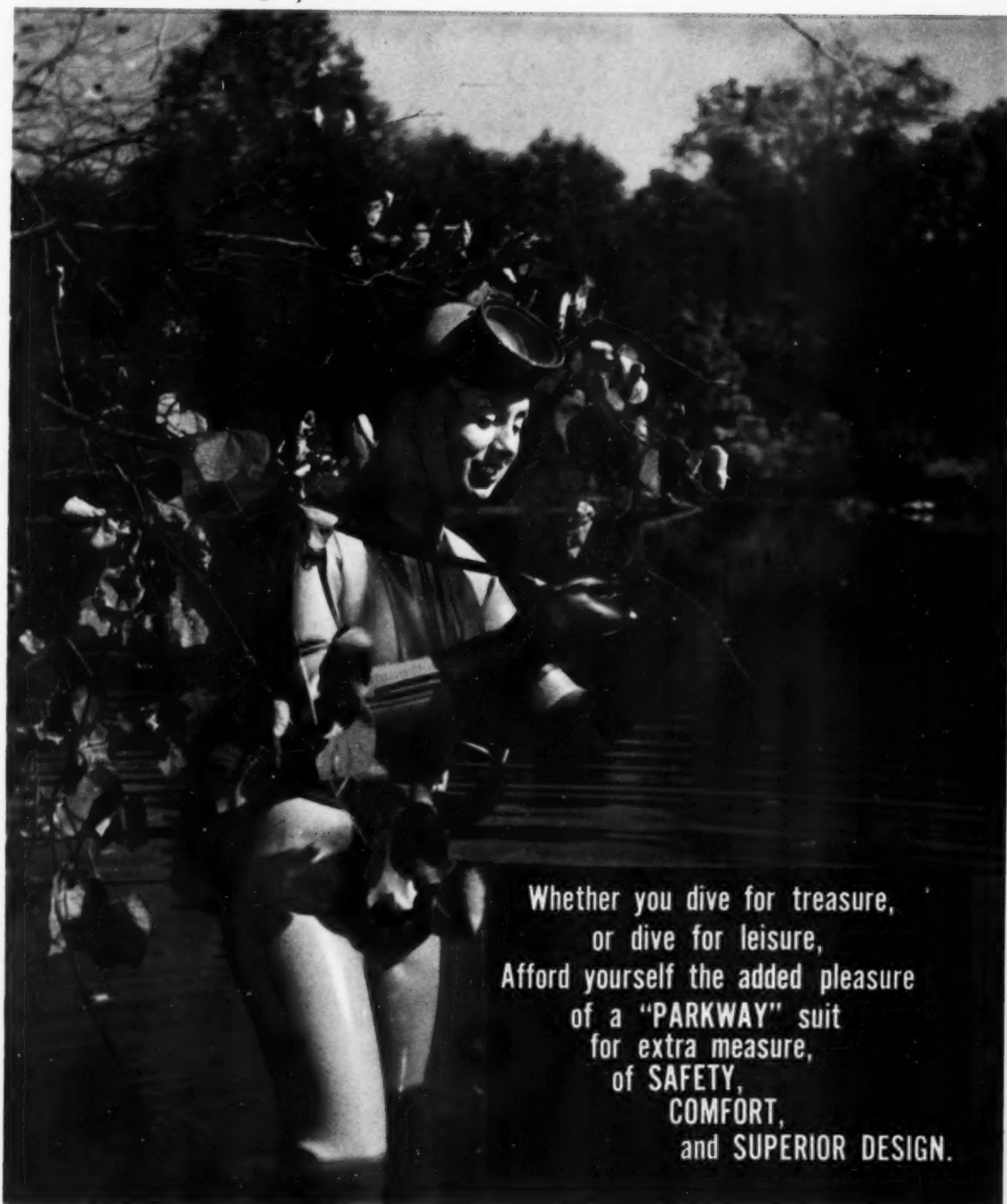
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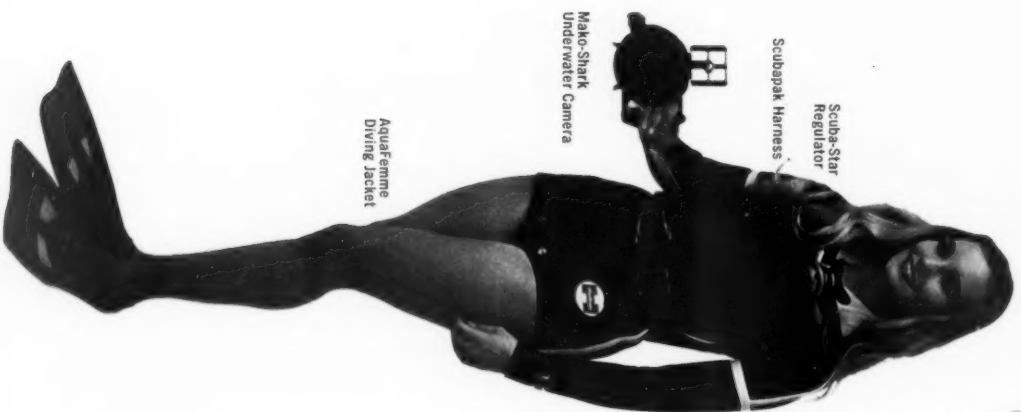
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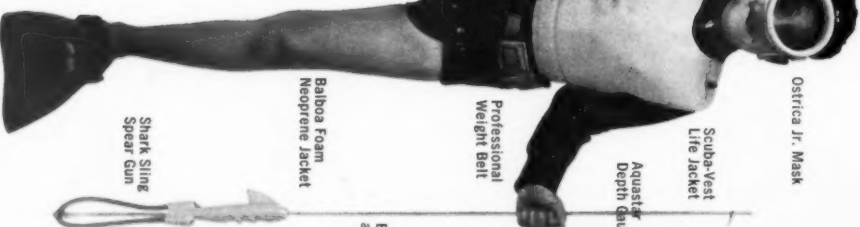
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